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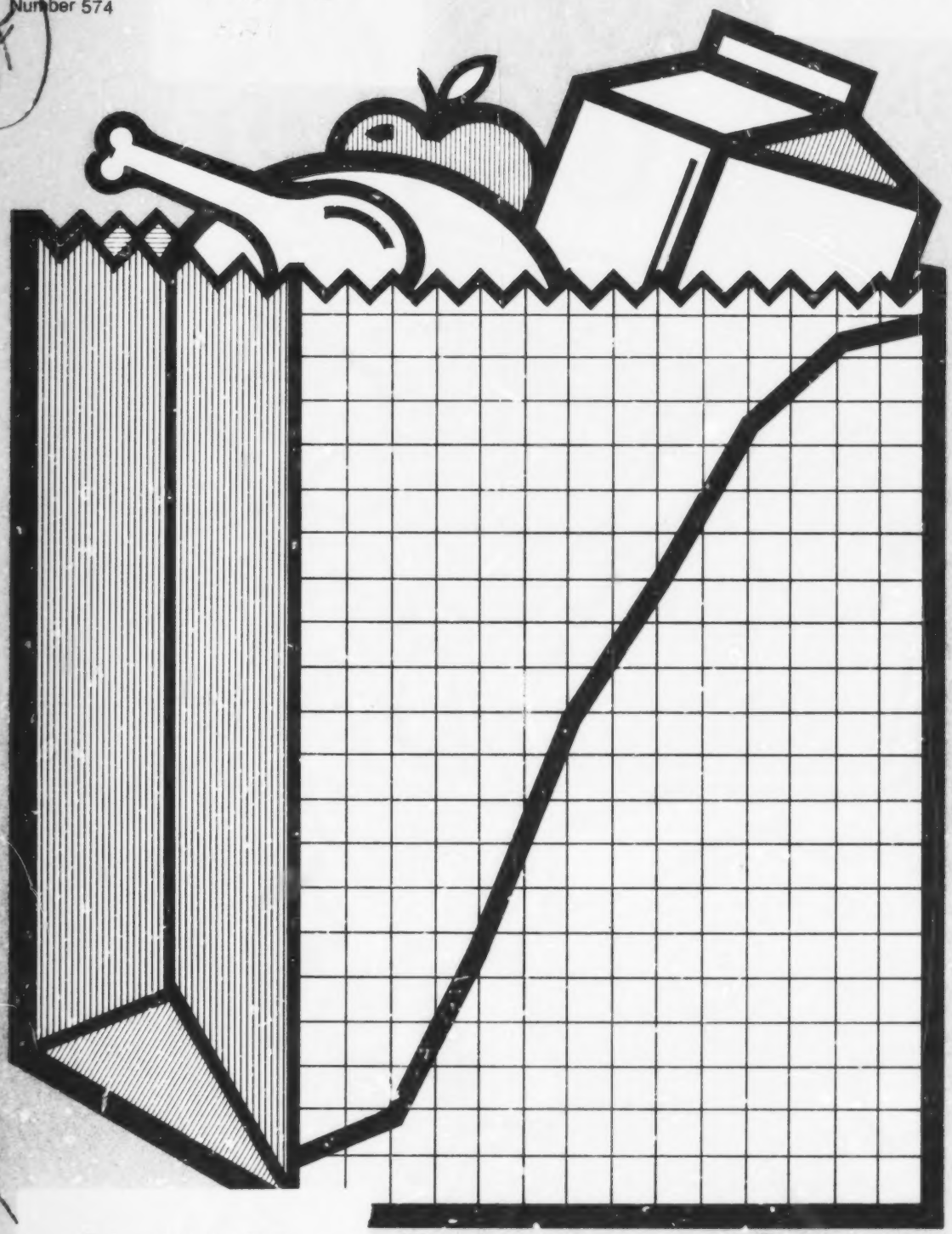
Food Cost Review, 1986



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FOOD COST REVIEW, 1986. By Denis Dunham, Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 574.

ABSTRACT

Food prices, as measured by the Consumer Price Index, increased 3.2 percent in 1986, compared with a 2.3-percent rise in 1985. The larger rise partly reflected a 4.3-percent increase in meat, poultry, and fish prices whereas prices declined slightly in 1985. The prices farmers received for commodities, as measured by the farm value of USDA's market basket of foods, declined 1.3 percent. This decline and a much larger one in 1985 brought the 1986 farm value of foods to the lowest value since 1979. The farm-value share of a dollar spent at foodstores fell to 30 percent from 31 percent in 1985. The farm-to-retail price spread of USDA's market basket of foods rose by 3.7 percent, partly reflecting higher food industry labor costs from rising employment. Higher advertising, packaging, and other food marketing expenses also contributed to the rise in the farm-to-retail price spread.

KEYWORDS: Retail food prices, farm-to-retail price spread, farm value, food marketing costs, food spending, profit, productivity.

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SUMMARY

Consumers paid 3.2-percent higher prices for food in 1986, as measured by the Consumer Price Index (CPI). This increase was more than the 2.3-percent rise in 1985, but about equals the average annual increase in food prices for the previous 4 years. Food prices in grocery stores rose much more in 1986 than in 1985 mainly because prices of meat, poultry, and fish declined slightly in 1985 but rose 4.3 percent in 1986. In addition, coffee prices soared about 26 percent last year.

For a second consecutive year, a decline in farm prices of food commodities restrained the rise in retail food prices. The farm value of USDA's market basket of foods, based on prices farmers received, fell by 1.3 percent in 1986, which followed a 7.1-percent decline in 1985. With this 2-year decline, the 1986 farm value of foods was the lowest since 1979.

The farm value averaged 30 percent of the retail cost for a market basket of foods purchased in grocery stores, down from 31 percent in 1985 and 34 percent in 1984. The farm share of the food dollar has declined in recent years because abundant food supplies have held down farm prices while rising processing and distributing charges have boosted retail prices.

The farm-to-retail price spread rose 3.7 percent in 1986 from higher packaging, advertising, and other input costs. There was also greater use of labor per unit of output. Employment in food retailing rose 4 percent, reflecting the trend toward buying more from service departments of supermarkets, such as instore bakeries and delicatessens. The increased price spread may also result from time lag for lower farm prices to pass through the marketing system.

Consumers spent $361 billion for foods produced on U.S. farms, about 4.5 percent more than in 1985. This amount includes purchases of farm foods in foodstores, roughly two-thirds of the total, and at away-from-home eating places. About 25 percent of last year's food spending went back to farmers, who received about $89 billion. This share is lower than the 30-percent farm value share for the market basket of food because it includes the much lower 16-percent farm share for away-from-home food spending.

For food-	1985	1986
	Billion dollars	
Consumers spent...	345	361
Marketing bill was...	257	272
Farmers got...	88	89

The remaining $272 billion--the marketing bill--went to the food industry for handling, processing, and retailing foodstuffs after they left the farm. The marketing bill rose $15 billion in 1986. Direct labor costs for food marketing represented 45 percent of the marketing bill. Labor costs were about two-fifths larger than the farm value of food commodities.

Although the dollar amount spent for food has risen, food spending as a percentage of personal income has declined over the past decade. A declining portion of income spent for food leaves more money for other expenditures and for savings, and is an often-used indicator of a rising standard of living. In 1986, personal consumption expenditures for food, as reported by the U.S. Department of Commerce, were 14.7 percent of total personal disposable income, down from 15.4 percent in 1981 and 16.3 percent 10 years ago.

Food Cost Review, 1986

INTRODUCTION

Consumers, farmers, and legislators want to know what causes food prices to change. They are also interested in the difference between what farmers get for the food they sell and how much consumers pay for that food, commonly referred to as the farm-to-retail price spread. To answer these concerns, Congress has directed the U.S. Department of Agriculture (USDA) to measure price spreads for foods originating on farms.

This report presents USDA's findings for 1986, including answers to the following questions:

How much did food prices rise in 1986? Why?

How much of the retail food price does the farm value represent?

How did farm-to-retail price spreads change last year, both for a market basket of foods and for representative foods such as Choice beef or bread?

How have recent developments affected food industry costs, profit margins, and productivity?

Finally, how much did Americans spend for farm-produced foods and how were these dollars divided among costs of producing and marketing food?

RETAIL FOOD PRICES AND CONSUMPTION

Retail food prices averaged 3.2 percent higher in 1986 than in 1985 (fig. 1). This increase was greater than the 2.3-percent increase in 1985, but about equalled the average annual 3-percent rise since 1981 when there was a sharp slowing in the rate of inflation. The general rate of inflation, to which food price increases contribute, rose only 1.9 percent in 1986. Inflation was lower than in any year since 1965, mainly because of the dramatic drop in energy prices, especially from crude oil. Before 1986, food prices rose by a smaller amount than the overall CPI for 7 consecutive years (fig. 2).

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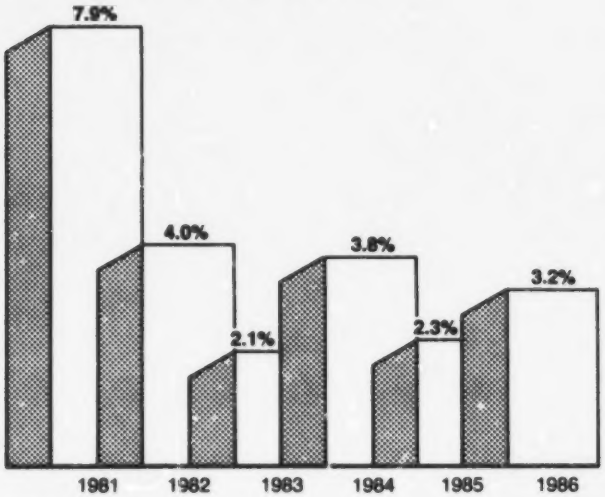
*This report was prepared by Denis Dunham of the Commodity Economics Division, Economic Research Service (ERS), U.S. Department of Agriculture. Lawrence Duewer, Joan Pearrow, Luigi Angelo, and Lee Christensen provided cost data for individual commodities, Howard Elitzak provided marketing bill data, and T.Q. Hutchinson provided transportation information. Appreciation is extended to Harry Harp for his helpful ideas and to Carol Jenkins for typing the report.

Figure 1

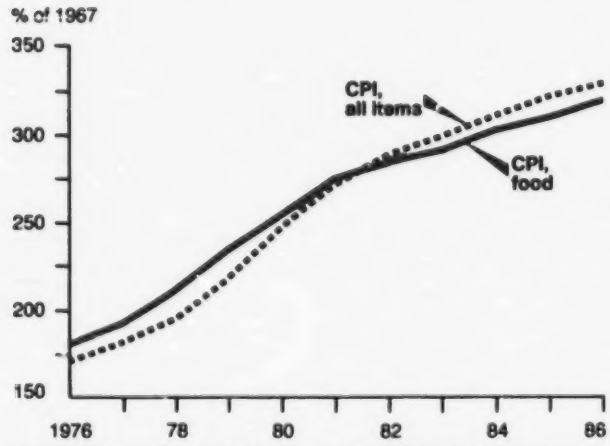
Food prices rise moderately



CPI, annual averages.

Figure 2

Food prices rise less than other consumer prices



Source: Consumer Price Index, Bureau of Labor Statistics, U.S. Department of Labor.

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These statistics came from the Consumer Price Index (CPI) for urban consumers, published by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). The CPI is the most widely accepted measure of changes in retail food prices.

The 3.2-percent retail price rise for 1986 included both prices at foodstores and those paid at restaurants and other eating places. Prices of food at eating places rose by more than those at foodstores: 3.9 percent compared with 2.9 percent. Restaurant meal prices increased about the same amount as the year before. Food prices in grocery stores rose much more, primarily because prices of meat, poultry, and fish declined slightly in 1985 but rose 4.3 percent in 1986. In 1985, prices in grocery stores rose only 1.4 percent (table 1).

Retail Prices of Most Foods Rose

Although prices of most foods at the supermarket averaged higher in 1986, price changes varied widely among the various food groups. Red meat prices, which account for about a fifth of the CPI's index for food consumed at home, increased 3.2 percent. Poultry prices averaged 7.5 percent higher and fish and seafood prices jumped 9.2 percent. Coffee prices soared 25.8 percent higher in 1986. Prices of cereals, baked goods, and other highly processed foods rose 2-3 percent. Dairy prices remained constant. Prices were unchanged or lower for some staple foods, including a half-gallon of milk and a pound of ground beef, sugar, and flour.

Here's a wrapup of price changes at the supermarket in 1986.

Meat. Prices of beef and veal averaged only 0.6 percent higher in 1986 than in 1985 reflecting an increase of 2.7 percent in beef production. Larger production held down prices for the fourth consecutive year. Increased beef supplies have resulted partly from a further reduction in the cattle herd which began in 1982. Beef and veal prices last year were 2 percent below 1982.

Retail pork prices advanced 8.2 percent from 1985 to 1986. Third-quarter prices rose sharply due to 9-percent lower pork production, reduced cold storage stocks of pork, and a decline in pork imports. Before last year's increase, pork prices were stable since 1982.

Poultry and Eggs. Despite a 6-percent increase in production, retail poultry prices averaged 7.5 percent higher. Prices kept rising as producers tried to meet consumer demand. Demand for broiler chicken was strengthened by rising pork prices and heavy promotion and sales of new chicken items by fast food chains. Broiler prices also climbed when severe heat in the Southeast slowed the summer's broiler output. Although prices were higher, poultry consumption increased to about 73 pounds per person, 3 pounds more than in 1985 and 10 pounds more than in 1982.

Egg prices averaged 6.9 percent higher in 1986 than in 1985. Egg prices declined sharply in 1985 following a record high in 1984 from poultry influenza outbreaks causing shortages. Per capita egg consumption declined about 1 percent last year, continuing a long-term trend.

Dairy Foods. Retail prices of milk and other dairy products were unchanged in 1986, the first time no increase was recorded in about two decades. Prices of fresh milk and cream went down 0.5 percent, but prices of cheese, ice cream, and other processed dairy products rose 1 percent. A Federal dairy

Table 1--Consumer price indexes for food and percentage change from previous year

Year	All food		Food at home		Food away from home	
	Index	Change	Index	Change	Index	Change
	1967-100	Percent	1967=100	Percent	1967=100	Percent
1950	74.5	1.4	77.6	1.2	--	--
1951	82.8	11.1	86.3	11.2	--	--
1952	84.3	1.8	87.8	1.7	--	--
1953	83.0	-1.5	86.2	-1.8	68.9	--
1954	82.8	-.2	85.8	-.5	70.0	1.7
1955	81.6	-1.4	84.1	-2.0	70.8	1.0
1956	82.2	.7	84.4	.4	72.2	2.0
1957	84.9	3.3	87.2	3.3	74.9	3.7
1958	88.5	4.2	91.0	4.4	77.2	3.1
1959	87.1	-1.6	88.8	-2.4	79.3	2.7
1960	88.0	1.0	89.6	.9	81.4	2.6
1961	89.1	1.3	90.4	.9	83.2	2.2
1962	89.9	.9	91.0	.7	85.4	2.6
1963	91.2	1.4	92.2	1.3	87.3	2.2
1964	92.4	1.3	93.2	1.1	88.9	1.8
1965	94.4	2.2	95.5	2.5	90.9	2.2
1966	99.1	5.0	100.3	5.0	95.1	4.6
1967	100.0	.9	100.0	-.3	100.0	5.2
1968	103.6	3.6	103.2	3.2	105.2	5.2
1969	108.9	5.1	108.2	4.8	111.6	6.1
1970	114.9	5.5	113.7	5.1	119.9	7.4
1971	118.4	3.0	116.4	2.4	126.1	5.2
1972	123.5	4.3	121.6	4.5	131.1	4.0
1973	141.4	14.5	141.4	16.3	141.4	7.9
1974	161.7	14.4	162.4	14.9	159.4	12.7
1975	175.4	8.5	175.8	8.3	174.3	9.3
1976	180.8	3.1	179.5	2.1	186.1	6.8
1977	192.2	6.3	190.2	6.0	200.3	7.6
1978	211.4	10.0	210.2	10.5	218.4	9.0
1979	234.5	10.9	232.9	10.8	242.9	11.2
1980	254.6	8.6	251.5	8.0	267.0	9.9
1981	274.6	7.9	269.9	7.3	291.0	9.0
1982	285.7	4.0	279.2	3.4	306.5	5.3
1983	291.7	2.1	282.2	1.1	319.9	4.4
1984	302.9	3.8	292.6	3.7	333.4	4.2
1985	309.8	2.3	296.8	1.4	346.6	4.0
1986	319.7	3.2	305.3	2.9	360.1	3.9

-- = Not available.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Table 2--Relative importance of food groups in consumer price index for urban consumers, December 1986

Food group	Weight in CPI	Weight in all food CPI	Weight in at-home CPI
		Percent	
All foods	16.246	100.0	NA
Food at home	9.974	61.4	100.0
Cereal products	.428	2.6	4.3
Bakery products	.928	5.7	9.3
Meats	2.089	12.9	20.9
Poultry	.491	3.0	4.9
Fish and seafood	.375	2.3	3.8
Eggs	.188	1.2	1.9
Fresh milk and cream	.625	3.9	6.3
Processed dairy products	.638	3.9	6.4
Fresh fruit and vegetables	1.021	6.3	10.2
Processed fruit and vegetables	.638	3.9	6.4
Sugar and sweets	.359	2.2	3.6
Fats and oils	.265	1.6	2.7
Nonalcoholic beverages	.891	5.5	8.9
Other prepared foods	1.037	6.4	10.4
Food away from home	6.272	38.6	NA

NA = Not applicable.
Source: U.S. Department of Labor.

termination program to reduce the milk cowherd nearly stabilized milk production, but had little effect on retail prices because the program reduced surplus supplies, not consumer milk supplies.

Fish and Shellfish. Prices of seafood, that is, fish and shellfish, increased 9.2 percent above prices in 1985, more than any other major food component of the CPI. Strong demand for seafood and a tight supply pushed prices up. Although combatting the danger of overfishing, new conservation measures in this country and in Canada limited some domestic supplies.

Cereals and Bakery Products. Prices of cereals and baked goods rose by 2.8 percent. The 1985 farm act dramatically cut market prices for wheat, rice, and other food grains. Lower raw product prices, however, hardly affected retail prices because most (about nine-tenths) of the retail price of cereals and baked goods goes to pay processing and marketing costs.

Processed Fruit and Vegetables. Processed fruit prices in 1986 averaged below 1985 prices. Prices for most processed fruit remained fairly stable, but frozen concentrated orange juice prices fell 15 percent.

Prices for processed vegetables remained stable as supplies were adequate to meet demand. Consumption data shows that canned and frozen vegetable use has fallen off in recent years.

Fats and Oils. The fats and oils component of the food CPI fell gradually, reflecting a 6-percent increase in world supplies of vegetable oils. Retail prices for shortening, salad oils, and margarine averaged 2.2 percent lower in 1986. Retail prices for nondairy substitutes and peanut butter increased slightly.

Nonalcoholic Beverages. Nonalcoholic beverages averaged 5.9 percent higher in 1986, primarily because coffee prices soared 26 percent. A severe drought in Brazil (which supplies about 25 percent of U.S. coffee) reduced the crop there by 58 percent. Retail prices of soft drinks rose about 2 percent.

Fresh Fruit and Vegetables. Fresh fruit prices averaged only 2.1 percent higher in 1986 as 12-percent larger citrus supplies helped dampen price increases. Citrus trees damaged by freezes in the past partially recovered and yields were much improved.

Fresh vegetable prices averaged 4 percent higher in 1986 mainly due to higher lettuce and tomato prices. In contrast, a record large potato harvest in the fall of 1985 (13 percent larger than the year before) reduced retail potato prices by 5 percent in 1986 and held down the CPI for fresh vegetables.

Food Consumption Stable

After rising for 3 consecutive years, preliminary estimates indicate that total food consumption remained steady in 1986 as measured by USDA's per capita food consumption index. This index, calculated from pounds of food and retail prices in a base year, was unchanged last year but was about 4 percent higher than in 1982 (table 3). While the index includes most foods, it does not represent total food use since data are not available for some fruit and vegetables and other products. Food consumption has been relatively stable over the long term, increasing by only about 4.5 percent during the 15-year period from 1967 to 1982. Food consumption data are derived from information on supply and use of farm products and therefore are not direct measures of consumption. Rather, they measure disappearance of food from commercial channels. 1/

Beef and veal consumption rose slightly to 82 pounds per person on a retail weight basis in 1986. However, pork consumption declined 4 pounds to 58 pounds per person. Poultry consumption continued its long upward trend, increasing about 3 pounds to 73 pounds. The use of dairy products rose because of higher consumption of cheese and low-fat milk products. Per capita consumption of most crop products was relatively stable.

Consumers have been altering their consumption of major food groups. Beef and veal consumption fell 16 pounds per person from 1976 to 1986, but pork consumption rose 4 pounds and poultry consumption jumped 21 pounds. This change in consumption patterns was partly in response to changes in the relative prices of beef and veal, pork, and poultry. Pork and poultry prices have increased much less than beef and veal. During the 10-year period from 1976 to 1986, beef and veal prices increased by 65 percent, pork by 37 percent, and poultry by 49 percent. Therefore, poultry prices declined in relation to beef and veal.

1/ For more detailed and historical information, see Food Consumption, Prices, and Expenditures, 1985, SB-749, USDA, Economic Research Service, Jan. 1987.

Table 3--Annual per capita food consumption, retail weight equivalent

Food group	1976	1983	1984	1985	1986 1/
			1967=100		
Aggregate food consumption index	105.5	105.5	106.8	109.2	109.0
			Pounds per capita		
Red meat	153	144	144	144	142
Beef and veal	98	80	80	81	82
Pork	54	62	62	62	58
Poultry	52	65	67	70	73
Eggs	34	33	33	32	32
Dairy products	322	304	306	309	314
Flour and cereal products	148	148	149	155	157
Fats and oils, including butter	58	63	62	67	68
Fresh fruit	81	88	91	90	91
Fresh vegetables 2/	70	76	81	81	79
Sugars and sweeteners, caloric	132	142	147	153	152

1/ Preliminary. 2/ Data are for lettuce, tomatoes, onions, carrots, celery, corn, broccoli, and cauliflower.

Per capita egg consumption hit a record low in 1986, but the long-term rate of decline in consumption has slowed in recent years. Dairy product consumption has increased about 4 percent since 1982; however last year's level was still 2.5 percent lower than in 1976.

Among crop foods, per capita consumption of fresh fruit rose 10 pounds during the past 10 years. The increase is due to expanded consumption of such noncitrus fresh fruit as grapes and bananas. Consumption of eight major commercial fresh vegetables rose 9 pounds per person from 1976 to 1986, mainly reflecting rising consumption of fresh tomatoes, lettuce, onions, and broccoli. Consumption of fats and oils increased 7 pounds per person since 1976, reaching a record-high 68 pounds last year. Sugar and sweetener consumption also jumped, from 132 pounds in 1976 to 152 in 1986.

MARKET BASKET PRICES

To better understand why grocery store food prices increased last year, we consider separately what happened to the prices of foods that American farmers produce (87 percent of consumer food purchases at the foodstore) and what happened to prices of nonalcoholic beverages and fish products (13 percent of consumer food purchases at the foodstore).

USDA uses its market basket concept to track price changes for commodities farmers sell and the foods consumers buy in retail foodstores. The market basket contains the average quantities of domestically produced food purchased

for at-home consumption in a base period. Changes in retail prices of the market basket are components of the Consumer Price Index (CPI) for all food.

The 2.9-percent rise in food prices at grocery stores was the combined result of a 2.2-percent increase in prices of domestically produced foods and a much larger rise of 5.9 percent in prices of nonalcoholic beverages and 9.2 percent in prices of fish and seafood.

To study the reasons for changes in prices of domestically produced foods, USDA divides the retail cost for a market basket of foods into the farm value and the farm-to-retail price spread (table 4). The farm value represents prices farmers received for raw commodities equivalent to foods in the market basket. The farm-to-retail price spread represents the difference between the retail price and the farm value. The price spread is the charges for assembling foods from farms, processing, distributing, and retailing foods. In 9 of the past 10 years, a rise in the farm-to-retail price spread contributed more to the rise in food prices than did changes in either the farm value or in the price of nonfarm foods.

Farm Value

Farm value is a measure of the return, or payment, received by farmers for the farm products equivalent to retail foods sold to consumers. Market basket farm value serves as an index of prices farmers receive for products later used for food. Farm values for individual food items are expressed in dollar amounts for comparison with the item's retail price. Farm value is calculated by multiplying farm prices by the quantities of farm products equivalent to foods sold at retail. An allowance is made in farm values if byproducts are obtained in processing. The farm value usually represents a larger quantity than the retail unit because the foodstuffs farmers produce lose weight in storage, processing, and distribution.

The farm product equivalent varies among foods. Only a slight amount of raw milk is lost, for example, as it is handled and processed for sale in cartons to consumers. Therefore, the farm value of the retail price per half-gallon is just a little more than the price that milk producers received per half-gallon. In contrast, nearly 2.4 pounds of live animal are needed to yield 1 pound of Choice beef on the meat counter. The payment the cattle producer receives for that larger quantity of live animal is the farm value in the price of 1 pound of retail beef.

Following a 7.1-percent decline in 1985, the farm value of foods in the market basket averaged 1.3 percent lower in 1986. With the past 2 years' large decline, the 1986 farm value was the lowest since 1979. The lower farm value last year mainly reflected prices further declining from the continued high crop surpluses and production.

Farm values of cereals and bakery products, and fats and oils were sharply lower in 1986 from lower farm prices for wheat, corn, and soybeans (table 5). Crop prices sagged all year due to surplus stocks at the beginning of the year and large production in 1986. Wheat production was the smallest in 7 years but supplies were still abundant, due in part to very weak exports. As a result, wheat prices declined further, lowering the farm value of flour in bakery and cereal products. Farmers received only 3.5 cents for the wheat flour in a 1-pound loaf of white bread, 0.6 cent less than in 1985. The farm value of other bread ingredients, mainly shortening and corn sweetener, was

Table 4--Indexes of retail price, farm value, and the farm-to-retail price spread for a market basket of farm foods, and farm value as a share of retail price 1/

Year	Retail price	Farm value	Farm-to-retail spread	Farm value share of retail price
	1967 = 100			Percent
1950	81	99	70	47
1951	90	114	75	49
1952	91	110	80	47
1953	88	102	80	45
1954	87	97	81	43
1955	85	90	82	41
1956	86	89	83	40
1957	89	93	86	40
1958	94	100	90	41
1959	92	92	92	39
1960	92	94	91	39
1961	92	92	93	39
1962	93	94	93	39
1963	93	90	95	38
1964	93	90	96	36
1965	96	99	94	38
1966	101	106	98	39
1967	100	100	100	39
1968	104	105	103	38
1969	109	115	106	39
1970	114	114	114	37
1971	116	115	116	37
1972	121	125	119	38
1973	142	168	127	44
1974	162	182	150	42
1975	174	188	165	40
1976	175	178	174	38
1977	179	178	180	37
1978	199	207	195	38
1979	223	229	219	38
1980	239	240	238	37
1981	257	247	263	36
1982	266	248	277	34
1983	269	242	284	33
1984	279	255	293	34
1985	283	237	309	31
1986 2/	289	234	321	30

1/ The market basket consists of fixed quantities of domestically produced foods. It was derived from consumer expenditures in foodstores between July 1972 and June 1974. Retail price indexes are derived from Bureau of Labor Statistics data. Farm value is based on prices received by farmers for commodities equivalent to foods in the market basket. The spread between the retail price and farm value represents charges for processing and marketing.
2/ Preliminary.

Table 5--Price changes for domestically produced foods 1/

Item	1982	1983	1984	1985	1986 2/
		Annual percentage change			
Market basket:					
Retail price	3.6	0.9	3.9	1.2	2.2
Farm value	.2	-2.2	5.4	-7.1	-1.3
Farm-to-retail spread	5.5	2.5	3.2	5.5	3.7
Meat products:					
Retail price	4.8	-1.1	.3	-1.0	3.2
Farm value	6.7	-6.2	2.5	-8.2	3.3
Farm-to-retail spread	3.0	4.0	-1.6	5.9	3.0
Dairy products:					
Retail price	1.4	1.2	1.3	1.9	.2
Farm value	-1.5	.1	-1.2	-4.1	-2.7
Farm-to-retail spread	4.4	2.3	3.6	7.3	2.6
Poultry:					
Retail price	-1.9	1.3	10.6	-1.0	7.5
Farm value	-3.9	5.9	17.7	-6.0	8.7
Farm-to-retail spread	.4	-3.4	2.6	5.5	6.3
Eggs:					
Retail price	-2.8	4.7	11.7	-16.6	6.9
Farm value	-8.1	8.9	11.1	-22.3	7.7
Farm-to-retail spread	7.8	-2.5	12.9	-5.9	5.7
Cereal and bakery products:					
Retail price	4.5	3.2	4.4	3.8	2.8
Farm value	-12.5	5.6	1.6	-8.4	-19.1
Farm-to-retail spread	7.1	2.9	4.7	5.3	5.1
Fresh fruit:					
Retail price	13.0	-6.1	13.7	11.1	1.7
Farm value	20.9	-23.8	43.2	-2.6	-5.7
Farm-to-retail spread	10.2	.7	5.2	16.4	4.1
Fresh vegetables:					
Retail price	.5	3.6	10.9	-4.3	4.0
Farm value	-8.5	2.3	11.9	-14.1	-3.5
Farm-to-retail spread	4.7	4.1	10.4	-.4	6.7
Processed fruit and vegetables:					
Retail price	5.3	1.0	6.0	2.6	-1.6
Farm value	-5.4	-6.4	14.2	10.2	-13.8
Farm-to-retail spread	8.5	2.9	4.1	.7	1.8
Fats and oils:					
Retail price	-2.7	1.2	9.5	2.2	-2.2
Farm value	-20.8	20.8	29.3	-16.1	-27.0
Farm-to-retail spread	4.1	-4.3	2.3	10.6	6.3
Other foods:					
Retail price	4.2	3.1	3.0	3.1	2.6
Farm value	-7.6	4.6	-3.4	-9.4	2.6
Farm-to-retail spread	6.3	2.8	4.0	5.1	2.6

1/ The market basket consists of fixed quantities of domestically produced foods derived from data on consumer expenditures in foodstores between July 1972 and June 1974. Retail price data are derived from U.S. Department of Labor, Bureau of Labor Statistics, price indexes. The farm value is based on prices received by farmers for commodities equivalent to foods in the market basket. The spread between the retail price and farm value represents charges for processing and marketing. Some historical data have been revised.

2/ Preliminary.

0.5 cent, 0.2 cent less than in 1985. Corn supplies were extremely large throughout the year, and prices fell sharply in the spring. Corn production was the second-largest on record, causing corn prices by harvest to sink below $1.00 per bushel at country elevators, the lowest level since the early 1970's. With the drop in wheat and corn prices, farm value of the grain ingredients in bakery and cereals products fell 19 percent in 1986. Soybean production remained relatively large in 1986, and the farm price of soybeans in the 1985/86 marketing year dropped by about 14 percent. An even larger decline occurred in prices of soybean oil, the principal oil used in food shortening and margarine, resulting in a 27-percent decline in the farm value of fats and oil products in the market basket.

Farm values of most animal food products increased in 1986. Producers received 3.3 percent more for red meat, which accounts for about half of the total farm value of the market basket. The increase was mainly due to a rise in hog prices. Pork production declined 5 percent as producers continued to trim inventories, raising pricing of barrows and gilts at 7 markets by 14 percent to an average of about $51 per hundredweight (cwt). Beef production increased about 3 percent in 1986 due mainly to an increase in dairy cow slaughter. Farm value of beef declined slightly. Farm value of poultry rose in 1986 despite a 6-percent increase in production. Producers received 46 cents of the average retail price of 84 cents per pound of frying chicken, about 6 cents more than in 1985. Farmers received 54 cents for a dozen eggs selling at an average retail price of 87 cents in the store, 2 cents more than in 1985.

The average price paid to producers for milk declined 2 percent in 1986 to the lowest level since 1979. As a result of the decline in the milk price, a half-gallon of fluid whole milk that averaged $1.11 at retail in 1986 returned the producer about 54 cents, 2 cents less than in 1985. However, commercial use of all dairy products rose in recent years in response to declining real prices, promotion, and strong growth in sales of products which use dairy products as an ingredient, such as pizza.

Farm values of fruit and vegetables fell in 1986, reflecting lower grower prices for many commodities. The farm value of processed products dropped about 14 percent due partly to larger supplies and significantly lower grower prices for processing oranges, potatoes, and dry beans. U.S. grower prices for processing oranges averaged $3.22 per box (equivalent ontree returns) during the 1985/86 season compared with $6.19 a box a year earlier.

Farm Value Share of Food Dollar

The farm value averaged 30 percent of the retail price of all foods in the market basket in 1986, compared with 31 percent in 1985 (table 4). The lower farm value share reflected the decline in farm value while retail prices rose, reflecting a rise in processing and marketing charges. Farm value share of the retail cost of food averaged 38-40 percent most years during the 1960's and 1970's but has trended down since 1979 because farm prices have not increased...retail prices have continued to rise. The size of the farm value share is not a direct measure of the welfare of producers, but a decline often accompanies a decline in farm income. In 1986, net farm income rose to an estimated $35 billion from $30.5 billion in 1985 but the increase was mainly the result of larger government payments.

Farm value as a share of the retail price varies greatly among foods. Farm value is a much larger percentage of the retail price of meats, eggs, poultry,

and dairy products than for most other foods (table 6). Thus, changes in prices received by farmers for these commodities usually affect retail food prices the most. Higher farm prices for eggs and poultry, for instance, caused much of the rise in retail egg and poultry prices. Hog prices also went up, and retail pork prices rose. Retail beef prices declined slightly, reflecting lower cattle prices.

The farm value of most foods that come from grains, oilseeds, and fruit and vegetables represents a small share of the retail price. Last year, farmers received about 7.5 percent of bakery and cereal prices, and 19 percent of retail prices of processed fruit and vegetables, and fats and oils (table 7). Because of the small farm share, only small upward adjustments in marketing costs are needed to offset farm price declines. For example, even though the farm value of grain commodities used in cereals and baked goods fell 19 percent (representing 1.4 percent of the retail price, based on a 7.5-percent share), retail prices of these foods rose 2.8 percent due to an increase in the farm-to-retail marketing spread.

Table 6--Farm value share of retail prices of selected foods, 1986

Item	Retail price	Farm value	Farm-to-retail spread	Farm value share of retail price
	---------Dollars-------			Percent
Eggs, Grade A large, 1 doz.	0.87	0.54	0.33	62
Chicken, broiler, 1 lb.	.84	.46	.38	55
Choice beef, 1 lb.	2.31	1.24	1.07	54
Milk, 1/2 gal.	1.11	.55	.56	49
Pork, 1 lb.	1.78	.82	.96	46
Sugar, 1 lb.	.34	.13	.21	39
Frozen orange juice, 12 fl. oz.	1.07	.39	.68	37
Cheese, natural cheddar, 1 lb.	3.05	1.10	1.95	36
Potatoes, Northeast, 10 lbs.	1.56	.50	1.06	32
Flour, wheat, all purpose, 5 lbs.	1.04	.28	.76	27
Peanut butter, 1 lb.	1.60	.44	1.16	27
Shortening, 3-lb. can	2.60	.46	2.14	18
Oranges, California, 1 lb.	.48	.08	.40	17
Margarine, 1 lb.	.79	.13	.66	16
Rice, long grain, 1 lb.	.45	.07	.38	16
Lettuce, 1 lb.	.54	.06	.48	11
Potatoes, frozen, French fried, 1 lb.	.70	.08	.62	11
Tomatoes, 1-lb. can	.51	.05	.46	9
White bread, 1 lb.	.56	.04	.52	7

Table 7--Market basket of food products originating on U.S. farms by food group: Index of retail cost, farm value, farm-to-retail price spread, and farm value share of retail cost, 1965-86 1/

Year	Meat products				Poultry				Eggs			
	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share
	1967=100			Percent	1967=100			Percent	1967=100			Percent
1965	96	100	91	59	102	113	92	57	106	111	100	62
1966	104	107	100	58	108	117	99	53	121	135	99	66
1967	100	100	100	56	100	100	100	49	100	100	100	59
1968	101	102	100	54	104	107	101	57	108	112	101	61
1969	111	116	106	56	110	114	106	51	126	142	103	67
1970	117	114	120	53	108	102	114	46	125	132	114	63
1971	116	112	119	52	109	105	112	47	108	104	113	57
1972	129	133	125	56	110	108	111	49	107	104	112	57
1973	160	180	137	60	156	187	127	59	159	187	118	70
1974	163	162	164	54	148	169	128	56	161	182	126	68
1975	178	188	166	57	164	195	133	59	156	174	129	66
1976	178	170	188	53	157	175	140	55	174	203	135	68
1977	174	170	180	53	158	179	138	56	169	182	151	64
1978	207	206	207	54	173	205	142	58	158	174	135	65
1979	242	235	250	52	182	204	160	55	173	194	142	66
1980	249	234	266	51	191	212	170	55	170	184	149	64
1981	258	236	284	49	199	210	187	52	184	206	151	66
1982	270	251	292	50	195	202	188	51	179	190	163	63
1983	267	236	304	48	198	213	182	53	187	207	159	65
1984	268	242	299	49	218	250	188	56	209	230	178	65
1985	265	222	317	45	216	235	198	53	174	179	168	61
1986	274	229	326	45	233	255	211	54	186	193	177	61

See footnotes at end of table.

--Continued

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Table 7--Market basket of food products originating on U.S. farms by food group: Index of retail cost, farm value, farm-to-retail price spread, and farm value share of retail cost, 1965-86 1/--Continued

Year	Dairy products 2/				Fats and oils 3/				Fresh fruit and vegetables 4/			
	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share
	1967=100			Percent	1967=100			Percent	1967=100			Percent
1965	91	85	96	44	96	107	92	31	99	104	96	33
1966	96	96	96	47	100	114	94	32	100	105	98	33
1967	100	100	100	47	100	100	100	28	100	100	100	32
1968	103	104	102	47	96	89	99	26	112	120	108	34
1969	106	109	103	48	96	91	98	26	112	113	112	32
1970	111	114	109	48	104	111	101	30	116	111	119	30
1971	115	116	113	47	114	129	108	32	122	122	122	32
1972	116	119	114	48	115	110	117	27	129	126	130	31
1973	127	135	119	50	127	173	110	38	154	168	148	34
1974	151	159	143	49	192	325	142	47	161	170	156	33
1975	154	164	146	50	207	254	189	34	165	172	162	33
1976	168	186	153	52	177	206	165	32	171	168	172	31
1977	173	187	163	50	192	249	170	36	195	193	196	31
1978	186	202	171	51	210	257	191	34	222	219	224	31
1979	207	230	187	52	226	278	206	34	238	217	248	29
1980	227	251	207	52	241	250	238	29	255	214	274	26
1981	244	266	224	51	267	262	269	27	287	265	297	29
1982	247	262	234	50	260	208	280	22	304	273	318	28
1983	250	262	239	49	263	251	268	26	301	247	326	26
1984	253	259	248	48	288	325	274	31	338	304	353	28
1985	258	248	266	45	294	273	303	26	347	277	446	22
1986	258	242	273	44	288	199	322	19	357	264	400	23

See footnotes at end of table.

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Table 7--Market basket of food products originating on U.S. farms by food group: Index of retail cost, farm value, farm-to-retail price spread, and farm value share of retail cost, 1965-86 1/--Continued

Year	Processed fruit and vegetables 4/				Bakery and cereal products				Other foods 5/			
	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share	Retail cost	Farm value	Farm-to-retail spread	Farm value share
	1967=100			Percent	1967=100			Percent	1967=100			Percent
1965	98	114	95	21	95	95	94	17	--	--	--	--
1966	100	108	99	20	98	104	97	18	--	--	--	--
1967	100	100	100	18	100	100	100	17	100	100	100	15
1968	106	116	104	20	104	98	105	16	101	105	100	15
1969	107	121	104	21	106	98	108	16	106	112	104	16
1970	109	113	109	19	112	104	114	16	111	115	110	15
1971	115	117	115	18	116	106	118	16	113	118	112	16
1972	117	122	116	19	116	112	117	17	116	124	114	16
1973	124	131	122	19	129	168	121	22	127	186	117	22
1974	152	184	145	22	167	243	152	25	215	422	179	29
1975	172	203	165	21	184	200	180	19	191	258	180	20
1976	174	197	169	20	181	162	185	15	179	181	179	15
1977	190	189	191	19	184	134	194	12	180	163	183	13
1978	209	284	192	25	200	154	209	13	194	193	194	15
1979	227	294	212	23	220	177	229	14	212	208	213	15
1980	242	311	227	23	246	207	255	14	240	324	226	20
1981	272	340	256	23	271	204	285	13	264	272	262	15
1982	286	321	278	20	283	179	305	11	275	252	279	14
1983	289	300	286	19	292	189	314	11	284	264	287	14
1984	306	344	298	20	305	192	329	11	292	268	296	14
1985	314	378	300	22	317	176	346	10	301	243	311	12
1986	309	326	305	19	326	142	364	7	309	250	319	12

-- = Not available.

1/ See table 4 for aggregate market basket and explanation of data. 2/ Includes butter. 3/ Excludes butter and includes peanut butter. 4/ Includes potatoes. 5/ Includes snacks, frozen prepared foods, sugar, soup, pickles, and miscellaneous products.

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Farm-to-Retail Price Spread

The farm-to-retail spread is the difference between farm value and retail price. It represents payments for all assembling, processing, transporting, and retailing charges added to the value of farm products after they leave the farm.

The farm-to-retail spread for the market basket of food averaged 3.7 percent higher in 1986, a smaller increase than in 1985. Since the farm value declined, the increase in the farm-to-retail spread accounted for all of the 2.2-percent rise in the retail cost of the market basket. The increase in the spread resulted largely from several factors, including greater use of some inputs per unit of output (such as labor in food retailing and more advertising), higher prices of some inputs such as metal and glass food containers, the time lag required for the declines in last year's crop prices to pass through the marketing system, and increases in profit margins of some retail foodstores, wholesalers, and manufacturers.

The farm-to-retail price spread widened most in the first quarter of 1986 when farm value fell sharply. The price spread narrowed slightly in the third quarter when farm value significantly rose, reflecting higher hog and poultry prices.

Price Spreads for all Food Groups Widen

The farm-to-retail price spread increased 2-6 percent for all major food groups in 1986 (table 5). The farm-to-retail spread for red meat rose by 3 percent, about half as much as in 1985 when the price spread increased because lower cattle prices were not fully reflected in retail meat prices. There was no increase in the price spread for Choice beef in 1986. However, the price spread for pork rose 5.5 percent as the average retail price of pork rose 16 cents while the farm value went up 11 cents.

The farm-to-retail price spread for bakery and cereal products and fats and oils increased 5-6 percent in 1986 partly from sharp declines in farm value. Retail prices of bakery and cereal products rose about 3 percent, perhaps reflecting some increased processing and distribution costs and the lack of significant price competition among cereal producers.

The price spread for dairy products rose about 2.5 percent in 1986, reflecting a drop in the farm value and modest rise in retail prices of processed dairy products.

The price spread for poultry, which increases less than most foods over time, went up 6 percent in 1986, perhaps due partly to unusually large variations in broiler prices at the farm level and relatively strong consumer demand that supported retail prices. There also has been little change in the farm-to-retail price spread for eggs, which rose 6 percent in 1986, following a decline of that much in 1985.

Farm-to-retail price spreads for fresh fruit and vegetables rose 4-7 percent. Most of the price spread for fresh fruit and vegetables consists of a retail margin which is high, compared with other foods, because losses from spoilage are relatively high and because many fruit and vegetables are bulky and require a relatively large amount of store area for display. The increase in the

marketing spread also reflects strong demand for fresh produce as evidenced by rising retail prices and consumption in recent years.

Trend in Price Spread and Farm Value Differ

Retail prices of the market basket of farm foods bought in grocery stores rose 21 percent from 1980 through 1986. Food prices rose much less than the 35-percent increase in the CPI for all items less food.

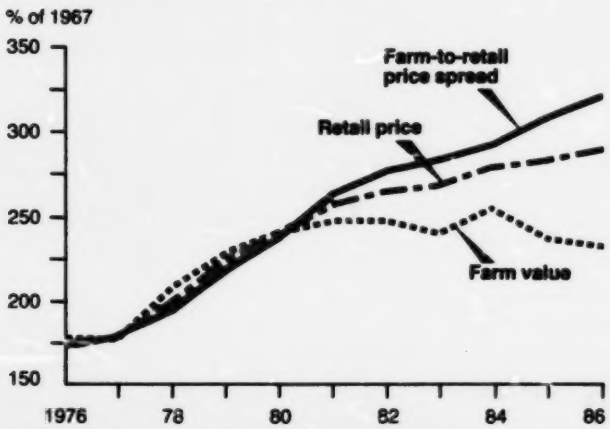
The slower rise in prices of domestically produced foods can be attributed to the farm value, which was 2 percent lower last year than in 1980 (fig. 3). In contrast, the farm-to-retail spread rose 35 percent, equal to the CPI for all items less food, and accounted for the rise in retail food prices.

The farm-to-retail price spread for the market basket of foods has increased each year since 1980. Increases in the farm-to-retail spread usually were close to the general inflation rate, reflecting the link (in terms of products and services used) between the food industry and the economy. Input costs of the food industry have gone up with the rise in the general price level, resulting in higher food processing and distributing charges.

Farm value of food has been variable during the 1980's, rising some years and then declining. Very large crop production and expanded meat supplies limited the rise in farm value to under 3 percent in 1981. As a result, retail food prices went up much less than inflation. Crop harvests were again large in 1982. Although meat production declined slightly, there was virtually no increase in the farm value because domestic and foreign demand for agricultural commodities was weaker during the long recession. The farm value declined in 1983 because of substantially increased livestock production, particularly hogs, and continued large supplies and weak demand for most food commodities. Farm value rose about 5 percent in 1984 from higher prices for

Figure 3

Retail price, farm value, and price spread for food



Data for a market basket of foods sold in retail stores. Farm value is prices received by farmers for commodities. Price spread represents all charges for processing and distribution.

poultry, eggs, fruit, and vegetables. However, the declines in farm value in the past 2 years more than offset the rise in 1984 and brought it to 2 percent below the 1980 level.

In contrast to the period since 1980, there was practically no difference in the movement of the farm value and farm-to-retail price spread during the 1970's. Between 1970 and 1980, all three market basket series--farm value, farm-to-retail spread, and retail price--more than doubled. The rise in retail food prices nearly equalled the rise in the general price level.

The contrasting trend in the market basket series between the 1970's and the period since 1980 reflects the much different behavior of the farm value. Amid strong world demand for grains and oilseeds and reduced supplies of meats, farm value rose by 46 percent between 1972-74. Wheat and soybean prices rose sharply following huge sales to Russia. Livestock prices rose reflecting rising feed costs, coupled with government actions to limit retail meat price increases that disrupted livestock marketings and production.

Between 1978-80, a smaller but significant increase of 16 percent occurred in farm value due in large part to lower beef production and strong world grain markets. Since 1980, weakening world demand for grains and rising domestic grain and livestock output have depressed farm value.

FOOD INDUSTRY COSTS, PROFITS, AND PRODUCTIVITY

Many factors influence how much the food industry charges for its services. Food industry inputs costs, profits, and productivity largely determine how much is added to the price of food after it leaves the farm.

Prices of Marketing Inputs

Increases in farm-to-retail price spreads mainly reflect rising costs faced by food industry firms. These costs include wages and salaries of workers and prices of many supplies and services bought by marketing firms from other parts of the economy. USDA's Economic Research Service developed a food marketing cost index (FMCI) for monitoring and analyzing changes in operating costs incurred in food processing, wholesaling, and retailing of domestically produced foods. The FMCI is constructed from price indexes of various marketing inputs then weighted by the derived share of each input in total operating costs. The FMCI is not a substitute for more conventional measures of marketing costs. However, the behavior of the index at least partially indicates changes in operating costs of the food marketing sector. The index does not account for changes in productivity and profits.

The largest component of the index (45 percent) is labor costs, which is composed of hourly earnings of workers and employee benefits. Labor is followed by food containers and packaging materials (15 percent), transportation rates (11 percent), and energy costs (8 percent). Other cost components include advertising, maintenance and repair services, insurance, short-term interest, rent, and miscellaneous supplies and services.

The FMCI declined 1 percent in 1986, the first annual decrease since the series began in 1967. The decline reflects the general inflation rate; falling lower last year than any year since 1965, primarily because of a dramatic drop in petroleum prices.

The combined price index of fuels and electricity in the FMCI declined about 16 percent in 1986 (table 8). Prices of petroleum products (diesel fuel and fuel oil) dramatically fell about 39 percent. Prices for natural gas and liquid propane gas, a principal energy source for food processing, declined about 5 percent. Electric rates rose slightly.

Lower interest rates also contributed to the decline in the FMCI. Short-term rates, as measured by 4- to 6-month prime commercial paper, averaged 20 percent lower in 1986 than a year earlier.

Labor Costs

The labor cost index includes both hourly earnings of workers and wage supplements, principally employer Social Security and unemployment taxes, pensions, and health insurance costs. Hourly labor costs, the largest component of the FMCI, declined slightly in 1986 for the second year mainly because of a 4.3-percent drop in average hourly earnings of workers in food retailing. The lower earnings can partially be traced to labor contracts negotiated that established a lower wage scale for new hires than current workers, and greater use of part-time workers. In addition, many chain stores have closed. Even though many of these stores subsequently reopened under new management, the re-employed workers often were paid lower wages.

Hourly earnings increased about 2.4 percent in food manufacturing last year, about equalling the gain in the previous 2 years. Hourly earnings in food manufacturing have historically been higher than those in retailing. Earnings in manufacturing averaged $8.74 per hour in 1986, compared with $7.03 in food retailing (table 9).

Wage supplements, the other component of labor cost, have increased steadily over the years, reflecting rising Social Security payments and health and welfare benefits for workers. The increase in costs last year included a rise in the Social Security tax rate for employers from 7.05 to 7.15 percent and an increase in the maximum amount of taxable wages from $39,600 to $42,000. Other employer-paid health and welfare costs continued to rise, but employers have slowed the rise by reducing benefits or requiring employees to pay a share out of their wages. Employee compensation data from the U.S. Department of Commerce show supplemental benefits were the same proportion of total compensation in 1985 (the latest available data) as in 1984, which means the increase in these costs was about the same as the increase in salary and wage payments. Prior to 1985, supplemental benefits had been rising faster than wages and salaries and, therefore, became a major target of employers trying to slow the rise in labor cost. Wage supplements in the food manufacturing industry averaged 19 percent of total compensation in 1985. Data are not published for food retailing but supplements for all retail trade were 13.6 percent of compensation, nearly unchanged from 1984.

Wage increases were small throughout the economy in 1986. Labor contract settlements in private industry during 1986 provided wage increases averaging 1.2 percent in the first year of the contract, and 1.8 percent annually over the life of the contract, according to data compiled by the U.S. Department of Labor. These averages are the lowest for any year since the series began in 1968. The size of average wage adjustments was dampened because 40 percent of workers received lump sum payments, which are not included in the averages. Comparable averages are not available for the food industry, but a sampling of

Table 8--Price indexes of food marketing costs 1/

Year	Labor-hourly earnings and benefits				Packaging and containers							Transportation services
	Total	Processing	Wholesaling	Retailing	Total	Paper boxes and containers	Metal cans	Paper bags and sacks	Plastic packaging	Glass containers	Metal foil	
					1967=100							
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	106.5	105.9	106.7	107.0	96.3	95.9	104.4	101.0	78.4	107.5	100.2	102.0
1969	113.7	112.7	113.5	114.8	99.5	99.4	107.1	103.6	79.9	114.7	105.5	105.0
1970	122.5	121.2	123.1	122.6	103.6	101.1	113.1	108.0	86.0	120.3	106.3	114.3
1971	131.9	130.9	131.9	133.0	106.6	102.4	123.8	109.7	81.8	131.6	106.4	128.5
1972	143.3	134.0	143.7	146.4	110.4	105.5	131.8	113.6	82.9	135.1	106.1	132.5
1973	154.2	151.3	153.7	157.3	117.3	115.1	138.5	121.6	86.4	138.9	106.0	135.2
1974	168.7	164.3	167.4	173.7	149.7	152.2	170.3	144.9	129.6	155.5	113.0	156.3
1975	187.4	184.1	182.3	192.9	174.4	170.3	200.2	161.6	170.8	181.8	116.6	176.9
1976	203.8	200.1	197.6	210.3	184.8	176.2	212.1	170.0	188.1	195.4	127.1	194.4
1977	222.4	217.6	217.8	229.4	192.8	176.5	231.4	176.7	193.6	214.4	140.0	205.1
1978	244.4	237.7	239.3	254.0	204.7	179.6	263.8	186.5	192.1	244.4	159.3	220.5
1979	265.8	257.9	260.4	276.1	228.4	202.1	293.0	209.7	216.9	261.1	175.6	251.3
1980	292.6	283.3	283.5	306.4	261.5	234.6	325.7	236.5	238.5	292.7	184.1	296.8
1981	321.3	309.2	309.5	338.6	280.9	258.2	345.8	258.9	262.5	328.6	203.3	345.9
1982	342.7	330.0	335.1	359.3	275.1	254.9	363.6	264.4	200.0	355.7	213.2	371.1
1983	356.8	341.9	358.1	371.1	280.7	251.0	374.3	265.4	226.2	352.4	214.0	374.5
1984	365.5	350.2	371.1	378.3	303.5	264.0	397.3	290.9	273.1	360.8	226.9	391.7
1985	363.0	357.9	373.5	363.5	312.1	271.7	416.9	294.7	274.4	380.0	213.8	393.9
1986	360.0	366.4	373.0	347.9	317.5	269.3	430.1	308.0	274.8	398.0	209.3	391.7

See footnotes at end of table.

--Continued

Table 8--Price indexes of food marketing costs 1/--Continued

Year	Advertising	Fuel and power				Communications, water, and sewage	Rent	Maintenance and repair	Business services	Supplies	Property taxes and insurance	Interest, short-term	Total marketing cost index
		Total	Electric	Petroleum	Natural gas								
						1967=100							
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	102.5	99.7	100.9	101.9	92.7	100.8	104.4	105.8	105.0	102.1	109.2	115.5	103.5
1969	107.5	100.5	101.8	102.4	93.2	102.8	109.4	113.7	109.9	102.8	118.3	153.2	109.2
1970	109.6	106.1	105.8	106.5	103.6	105.1	115.4	122.3	115.6	106.5	130.4	150.9	116.1
1971	108.7	112.3	113.6	110.3	108.0	111.3	121.7	131.5	123.5	108.7	141.9	100.0	123.0
1972	113.2	118.4	121.5	113.3	114.1	117.8	126.3	137.9	128.2	119.9	153.3	92.6	130.5
1973	118.2	133.1	129.3	139.7	126.7	120.8	131.1	146.7	133.3	113.4	158.4	159.5	139.4
1974	124.2	198.9	163.1	272.2	162.2	126.3	145.9	164.3	146.8	145.1	162.9	192.6	159.8
1975	136.9	236.1	193.4	309.4	216.7	131.8	167.0	182.2	159.6	169.9	180.1	123.7	178.8
1976	152.8	264.5	207.7	336.9	286.8	138.4	174.9	196.1	171.3	181.3	194.5	104.7	193.6
1977	166.3	310.6	232.9	384.1	388.0	142.6	185.0	209.2	182.5	188.9	219.0	109.8	209.2
1978	181.3	331.7	250.6	398.1	428.7	147.5	199.2	226.9	195.2	197.8	237.3	156.4	227.0
1979	197.4	418.2	270.3	574.6	544.8	148.7	216.4	249.7	211.0	224.3	246.9	213.5	252.2
1980	214.5	563.2	321.6	850.6	724.8	153.9	235.0	277.1	230.6	259.3	270.2	240.3	286.0
1981	234.9	669.2	367.9	1,056.2	826.3	168.7	255.0	304.0	254.2	283.8	294.0	288.8	317.5
1982	260.1	705.1	406.1	1,012.1	990.3	186.7	264.3	325.1	277.1	289.1	309.9	232.6	334.0
1983	280.2	705.1	417.9	895.9	1,155.6	199.6	260.6	338.2	291.9	286.5	327.5	174.0	342.4
1984	300.5	712.5	440.0	880.4	1,162.6	215.5	261.3	350.3	306.1	288.3	343.7	198.4	356.2
1985	320.2	700.0	453.5	821.5	1,158.2	224.9	268.3	360.3	321.9	287.9	362.0	157.2	358.7
1986	339.7	590.2	457.9	499.8	1,096.9	236.1	275.6	368.5	334.1	282.7	382.3	125.1	355.2

1/ Indexes measure changes in employee wages and benefits and in prices of supplies and services used in processing, wholesaling, and retailing U.S. farm foods purchased for at-home consumption.

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Table 9--Average hourly earnings of production and nonsupervisory employees of food industries

Year	Manufacturing, food and kindred products	Wholesale trade, groceries, and related products	Foodstores	Eating and drinking places
		Dollars per hour		
1977	5.37	5.43	4.77	2.93
1978	5.80	5.92	5.23	3.22
1979	6.27	6.39	5.67	3.45
1980	6.85	6.96	6.24	3.69
1981	7.44	7.57	6.85	3.95
1982	7.92	8.25	7.22	4.09
1983	8.19	8.70	7.51	4.27
1984	8.39	9.03	7.64	4.26
1985	8.57	9.20	7.35	4.33
1986	8.74	9.19	7.03	4.35

Source: Employment & Earnings, U.S. Department of Labor.

labor contracts that were negotiated indicate that most workers received small wage increases or some other increased compensation.

Labor contracts negotiated in 1986 affected roughly 250,000 foodstore clerks and meatcutters. This number represented roughly 33 percent of union workers in food retailing, but only about 10 percent of all employees in the food retailing industry. Labor settlements varied among geographic areas of the country, reflecting economic considerations such as the profitability of the food chains that employ the workers and the competitive environment in the marketing area. Union workers in some markets agreed to wage givebacks and two-tier wage scales because their companies faced stiff competition from nonunion stores with lower labor costs. For example, 2,500 workers in stores located in Ohio agreed to a first-year wage freeze, followed by 36-cent hourly pay cuts for top level employees over the rest of the 3-year contract. In exchange, workers affected by the pay cuts will receive lump-sump cash payments or company stock. The contract also provides that if the company opens new stores in the market area, it is not obligated to follow all the terms of the new contract. Wage concessions appear to have diminished in 1986 but many settlements contained worker's concessions on benefits, overtime pay, and pay scales for new workers that will slow the rise in future labor costs for food retailers. In the Ohio contract, workers hired in the future will receive straight-time pay rather than time and a half for Sunday work, pension contributions will begin after 12 months on the job, and vacation schedules require longer employment for more days vacation.

Labor contracts of retail clerks and meatcutters negotiated last year frequently provide for bonuses, amounting to lump-sum payments, to workers rather than increases in hourly wage rates. While the payments increase labor costs, they are presumably less costly than wage increases since some benefit costs such as the cost of workers' vacation time and holidays, are not permanently raised. The amount of the lump-sum payments usually were equivalent to 2-3 percent of workers' annual wages. For instance, 10,000 retail food clerks

in the San Francisco area agreed to 3-year contracts providing five bonuses, with a wage increase on the day the contract expires. The bonuses will amount to 3.1 percent of a clerk's annual salary. Full-time clerks receive $13.38 an hour.

Some contract settlements provided for wage increases rather than bonuses. In the largest labor settlement in 1986, 25,000 clerks and meatcutters employed by food retailers in New York City agreed to a 3-year contract providing for 5- to 6-percent annual wage increases each year. Wages for journeyman clerks will increase $2.25 per hour by the time the contract expires. Employees also received an increase in the ceiling of major medical plans and higher dental benefits. However, the contract changes Sunday pay to straight-time pay and allows stores to have a second shift without overtime pay.

Most labor settlements in food retailing last year raised pay for most current workers. However, through an assortment of other changes in labor employment and compensation, the retail food industry has lowered hourly labor costs as measured by the U.S. Department of Labor series of average hourly earnings. The lowered pay in retail food occurred partly by initiating lower wages for new workers, reducing overtime pay, changing work rules to allow lower paid workers to do additional jobs in stores, and employing more part-time workers.

Packaging, Supplies, and Services

Price changes were small last year for most principal categories of inputs bought by the food industry. The index of prices paid for food containers and packaging materials rose about 2 percent in 1986. Prices for glass containers and metal cans rose 3-5 percent. Prices for paperboard products, such as shipping boxes, and plastic packaging changed little in 1986.

A price index of supplies used by food processors and retailers averaged about 2 percent lower in 1986. This index is based on producer prices of motor vehicle supplies, chemicals, cleaning materials, and numerous other items. In contrast, prices for most services continued to increase last year. Advertising rates advanced about 6 percent, and business services such as accounting and printing went up 4 percent. Property taxes and insurance, a rapidly rising cost in recent years, advanced 5.5 percent in 1986.

Transportation Rates

The transportation cost index representing railroad freight rates was practically unchanged in 1986 for the second consecutive year. Most food shipped by railroad are canned and bottled products. Shipments of foodstuffs by rail totaled 562,000 boxcars in 1986, about the same as in 1985. Some foods such as meats and fresh fruit and vegetables are shipped in truck trailers on flat cars (TOFC) but information on these charges are not available. Shipments of fresh fruit and vegetables by TOFC rose about 8 percent during 1986, but TOFC shipments remained about 7 percent of total produce shipments. Nearly an equal quantity of produce is shipped in rail cars.

About 87 percent of fresh produce is transported by truck. Individuals who own and operate trucks appear to carry slightly below half of the west to east shipments of produce, and shipments from Florida. The bulk of the produce is hauled by trucking firms operating fleets, and by companies whose principal business is not transportation. Some owner-operators now lease their equipment and their services as drivers to these companies. All groups of

truckers have become important fresh and processed food distributors, and competition among them for hauling produce has held down transportation charges.

Operating costs of trucks hauling produce, as reported by USDA's Office of Transportation, declined about 3 percent in 1986. Lower costs were mainly a result of a steep decline in diesel fuel prices. Truckers experienced a major increase in insurance costs of about 12 percent in 1986.

Although estimated costs declined, truck rates for shipping fresh produce rose modestly in 1986. For example, the rate for shipping lettuce from California to New York City averaged $3.75 per box, 3.6 percent higher than in 1985. Rates averaged $3.16 per box for citrus and vegetables, about 3.3 percent higher (table 10). The increased rates may represent a catchup following an increase in costs but a decline in rates in 1985, and strong competition among haulers that has held rates relatively stable in prior years.

Table 10--Trucking costs and rates for fresh fruit and vegetables, selected items and routes, annual average, 1980-86

Year	Truck cost for fleet operators 1/	Truck rates by commodity and origin/destination 2/		
		Lettuce 3/, California, to New York City	Citrus and vegetables, Southern California to New York City	Apples, Washington to New York City
	Dollars per mile	Dollars per box		
1980	0.965	3.36	2.77	3.09
1981	1.082	3.45	2.77	3.25
1982	1.112	3.62	2.91	3.20
1983	1.127	3.62	2.98	3.41
1984	1.153	3.65	3.18	3.19
1985	1.167	3.62	3.06	3.20
1986	1.136	3.75	3.16	3.21
		Percent		
Change from 1980-86	7.7	11.6	14.0	3.9

1/ Truck costs developed by Office of Transportation, USDA. 2/ Truck rates are the average rates reported by Agricultural Marketing Service, Market News Service, USDA, for the first week of the month. Rates per truck were converted for 1980 to 1983 at: Lettuce 800 boxes/load, citrus and vegetables 1,000 boxes/load, apples 900 boxes/load. Beginning in 1984, rates were converted at 850 boxes/load of lettuce from Salinas, California, and 860 boxes/load for lettuce from Imperial Valley, California, and 1,000 boxes/load for apples. 3/ January to April: Imperial Valley, California to New York City; May to December: Salinas, California, to New York City.

Financial Ratios

Two financial ratios are useful in evaluating the profitability of the food industry: profit margin and return on stockholder equity. The profit margin is net income as a percentage of sales; it measures the portion of the sales dollar left after paying all expenses, including the cost of products. The profit margin helps explain the importance of profits relative to costs that together make up the consumer food dollar. Return on stockholder equity, which reflects the earning power of the owner's investment, shows food industry profitability compared with that of other industries.

Pre-tax margins of food chains typically average about 1.5 cents per dollar of sales, and slightly over 1 cent after taxes. This relatively low margin is possible because of high sales volume and rapid inventory turnover. Profits per dollar of sales of food manufacturers are higher, averaging 5-6 cents before taxes and 3-4 cents after taxes, mainly because of their larger capital investment per dollar of sales and slower inventory turnover.

After-tax profit margin of food and tobacco manufacturers averaged 4.3 percent of sales in 1986, up from 4.1 percent in 1985, based on data compiled by the Bureau of Census. Returns on stockholders' equity rose to 16 percent last year (table 11). Return on equity for the food and tobacco industry was much higher than the 9.9-percent average for all manufacturers.

Profit margins of many food processors widened last year, presumably helped by lower energy costs and commodity prices. Fifty companies listed in Forbes magazine's annual industry survey showed a 12.9-percent increase in profits over the latest 12-month period, while sales rose only 6 percent.

Profit margins of retail food chains averaged 1.1 percent of sales in 1986, down from 1.3 percent a year earlier and the lowest since 1983. The decline in the industry profit margin was mainly due to extraordinary nonoperating factors of two large chains. One of the chains had a large profit from the sale of some operations in 1985 and the other chain reported a very large loss in 1986 related to a restructuring program. If these items were eliminated from the data, the profit margin for the industry last year would resemble that for 1985. Food chains' profit margins during 1984 and 1985 exceeded the traditional industry standard because of reduced cost pressures, particularly for labor and energy. Retailers have also been opening larger supermarkets that carry more nonfood items (which have higher markups than groceries).

Profits for individual leading food chains varied in 1986 (table 12). After-tax profits ranged from 0.6 percent to 2.6 percent of sales among 12 leading food retailing companies. Profit margins of most companies last year were very similar to 1985. Two companies, Lucky and Grand Union, significantly bettered their profit margin per dollar of sales. Kroger, the largest food chain, reported a smaller profit margin in 1986.

Labor Productivity

Food industry productivity estimates for 1986 were not available at press time. But there have been some early pointers. There was less than a 1-percent gain in productivity during 1986 in the Nation's business sector, excluding farming (table 13). But there was a large rise in employment in the food industry, which could have offset increases in output. Productivity

Table 11--Profit margins of food manufacturers and retail food chains, industry averages

Year and quarter	Food manufacturers 1/			Retail food chains 2/		
	After-tax profits as a percentage of--					
	Sales	Stockholder equity	Assets	Sales	Stockholder equity	Assets
	Percent					
1976	3.5	14.9	7.5	0.8	10.0	4.3
1977	3.1	13.2	6.7	.8	10.7	4.5
1978	3.3	13.8	6.8	.9	12.7	4.7
1979	3.3	14.7	7.2	.9	12.7	4.2
1980	3.4	14.7	7.1	.9	13.7	4.5
1981	3.1	13.6	6.5	1.0	13.9	4.7
1982	3.1	13.0	6.3	.9	12.7	4.4
1983	3.3	13.3	6.0	1.1	13.6	4.9
1984	3.3	13.3	6.0	1.4	17.3	6.0
1985 3/	4.1	15.3	6.6	1.3	14.5	5.3
1986 3/	4.3	16.0	6.4	1.1	11.9	4.4
1982:						
I	2.8	12.0	5.7	.1	.9	.3
II	3.2	13.7	6.6	1.2	16.5	5.7
III	2.7	11.5	5.5	1.0	13.5	4.6
IV	3.6	14.8	7.2	1.5	19.3	6.7
1983:						
I	2.2	8.0	3.9	1.0	11.8	4.3
II	3.4	12.5	6.2	1.2	14.2	5.2
III	3.5	13.2	6.5	.9	11.2	4.0
IV	4.0	15.2	7.4	1.3	17.0	6.0
1984:						
I	3.3	13.0	6.1	1.5	16.0	6.5
II	3.3	13.8	6.4	1.4	17.6	5.9
III	3.1	12.8	5.7	1.2	14.3	4.8
IV:	3.3	13.6	5.9	1.6	19.2	6.9
1985: 3/						
I	3.4	12.8	5.6	1.1	13.0	4.7
II	3.9	15.0	6.6	1.3	14.9	5.5
III	4.6	16.5	7.3	1.2	13.2	4.8
IV	4.6	16.9	7.1	1.5	16.8	6.3
1986: 3/						
I	3.6	12.9	5.3	1.2	13.0	4.8
II	4.1	15.7	6.5	1.3	13.8	5.3
III	4.0	15.5	6.0	.7	7.1	2.6
IV.	5.2	19.6	7.5	1.2	13.6	5.0

1/ Data represent aggregate estimates for corporations, based on a sample of company reports. 2/ Data are based on reports from all food retailing corporations having more than $100 million in annual sales, at least 70 percent of which are derived from supermarket operations. 3/ Data for food manufacturers are not comparable with earlier years because the tobacco industry has been combined with food manufacturers.

Source: U.S. Department of Commerce.

Table 12--After-tax profits of selected supermarket food chains per dollar of sales, fiscal year or four calendar quarters

Firm	1983	1984	1985	1986
		Percentage of sales		
Albertson's	1.64	1.68	1.68	1.86
Allied Supermarkets	-.25	.02	.66	.60
American Stores	1.48	1.53	1.11	1.03
Atlantic & Pacific Tea	.54	.86	.85	.88
Food Lion	2.36	2.54	2.55	2.57
Giant Food	2.07	2.11	2.54	1.84
Grand Union	--	-.20	.78	1.24
Kroger	.83	1.01	1.00	.81
Lucky	1.29	1.08	.78	1.28
Safeway	.99	.94	1.00	--
Stop & Shop	1.19	1.62	1.03	1.13
Supermarkets General	1.16	1.21	1.25	1.14
Winn-Dixie	1.60	1.47	1.34	1.26

-- = Not available.

Source: "Food Institute Reports," The American Institute of Food Distribution Inc., Fair Lawn, New Jersey.

declined in food retailing and eating places the past decade, making it probable that productivity did not increase in 1986.

However, there has been a long uptrend in labor productivity in industries that manufacture food which, it is reasonable to assume, continued in 1986. Output per unit of labor in six food manufacturing industries for which data are available increased 1.6-5.5 percent per year over the past 17 years. These increases resulted from an upward trend in output and a small decline in hours worked. Labor productivity among food manufacturers has increased most in fluid milk processing and grain milling (table 14). Productivity has grown erratically for most industries, partly because of ups and downs in farm output and business conditions.

Output per unit of labor among supermarkets has drifted lower over the past decade. Output fell 1 percent lower in 1985 from 1984, about 7 percent lower than 10 years ago. However, there have been some improvements in the efficiency of some operations including computer-assisted checkout systems and data processing systems, and new store formats such as warehouse stores with a limited assortment of products. Warehouse stores provide reduced services and thus cut labor requirements, or they foster higher sales per unit of labor. Many food chains have closed smaller, inefficient stores. On the other hand, supermarkets have been responding to consumer demand for saving time in food buying and preparation by expanding service departments that offer prepared foods and nonfood products. Providing the products and shopping convenience that consumers want has added to industry employment and made productivity gains more difficult. In addition to tailoring products to consumer demand,

Table 13—Productivity measured by output per unit of labor

Year	Food-stores	Eating and drinking places	Nonfarm business sector of the economy
		1977=100	
1967	98.0	97.5	87.0
1968	103.0	99.7	89.3
1969	103.9	97.8	88.9
1970	109.8	101.0	89.1
1971	110.4	98.3	91.8
1972	110.3	102.3	94.7
1973	105.5	103.6	96.4
1974	101.1	99.1	94.3
1975	100.7	101.0	96.0
1976	102.0	101.4	100.0
1977	100.0	100.0	100.0
1978	94.9	99.3	100.8
1979	96.3	99.4	99.2
1980	98.9	99.5	98.8
1981	95.2	97.0	99.8
1982	93.5	96.6	99.2
1983	93.9	97.1	102.5
1984	93.6	94.9	104.3
1985 1/	92.7	92.8	104.8
1986 1/	--	--	105.5

-- = Not available.
1/ Preliminary. Some historical data were revised.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

many supermarkets are trying to make shopping easier and faster by opening more registers at busy times and extending store hours.

Based on U.S. Department of Labor data, labor use in food retailing increased 18 percent between 1980 and 1985 (the latest available data) and output rose 10 percent, resulting in lowered productivity. The effect of more use of labor on unit costs may have been largely offset, however, by a decline in average hourly earnings since 1984.

The trend in productivity is similar for eating places. Labor productivity in eating and drinking places declined 2.7 percent in 1985 and was 7 percent lower than 1975. Productivity declined the past decade because hours worked rose 43 percent while output rose 32 percent.

FOOD SPENDING: HOW IT WAS DISTRIBUTED

Food spending (what consumers spent for domestically produced foods in 1986) depends on quantities bought as well as the prices paid. The expenditures

Table 14—Indexes of output per employee hour in selected food manufacturing industries

Year	Red meat products	Fluid milk	Preserved fruit and vegetables	Grain mill products	Bakery products	Sugar
			1977 = 100			
1967	74.8	62.9	73.8	73.0	82.8	77.1
1968	76.6	66.5	75.6	77.0	84.5	80.5
1969	75.7	69.6	76.9	78.3	84.7	78.6
1970	77.3	73.7	79.7	79.7	87.5	85.9
1971	79.3	78.4	83.1	83.3	89.5	84.9
1972	85.0	85.1	84.6	85.5	94.1	90.4
1973	82.8	88.4	93.1	81.7	93.6	96.3
1974	84.5	90.9	91.7	86.4	93.6	93.2
1975	84.4	95.5	93.7	87.1	93.4	94.0
1976	93.4	99.5	100.1	91.1	93.9	95.8
1977	100.0	100.0	100.0	100.0	100.0	100.0
1978	98.8	108.6	104.1	100.2	97.6	98.3
1979	101.7	117.3	98.9	101.0	95.0	103.1
1980	107.0	126.5	100.8	105.3	93.7	100.1
1981	107.9	131.6	99.2	110.9	96.2	98.8
1982	112.3	140.0	107.9	121.0	103.3	90.4
1983	115.9	145.5	110.9	125.5	106.9	98.6
1984	117.0	152.6	112.4	132.7	106.8	99.7
			Percent			
Average annual change:						
1967-84	2.6	5.4	2.5	3.6	1.5	1.5
1979-84	2.8	5.5	2.6	5.6	2.4	-.7

Source: U.S. Department of Labor, Bureau of Labor Statistics.

reported in this section include spending at eating places and foodstores. Food expenditures are broken into two components:

- The farm value is an estimate of the dollar value at the point of sale by farmers of the farm commodities equivalent to foods purchased by consumers at foodstores and eating places.
- The marketing bill is the difference in dollars between the farm value and consumer expenditures for foods produced on U.S. farms.

Last year's changes in marketing bill can be evaluated by dividing the total bill into costs for several principal marketing functions (such as processing and retailing) and also by breaking it down into costs for principal inputs such as labor and packaging.

Nearly all of the estimates just mentioned are based on secondary data, not on direct measures of consumer food expenditures or actual marketing costs. This limits their accuracy. So consider them as general indicators, not precise measures, of levels and yearly changes.

Food Expenditures Up

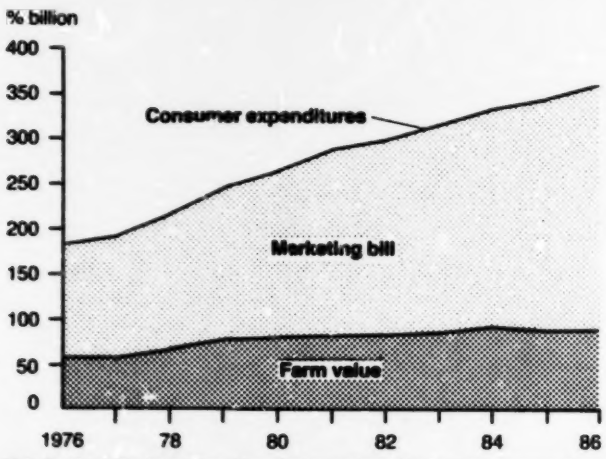
Consumers spent $361 billion for foods originating on U.S. farms in 1986 (fig. 4 and table 15). This amount was less than the total consumers spent for all food because it excluded expenditures for imported foods and fishery products. About 63 cents out of each dollar was spent at retail foodstores on food for use at home. The remaining 37 cents represented the retail value of foods served by public eating places, hospitals, schools, airlines, and other institutions. The market shares for away from home eating was slightly higher than in 1985 and the foodstore share declined 1 percentage point.

Consumer expenditures for farm foods in 1986 rose 4.5 percent above the 1985 level, largely from higher food prices which rose more than in 1985. A rise of about 1 percent in population accounted for some of the increase in value of food purchased. Spending for food away from home rose at a greater rate than spending in foodstores, partly because of a larger price increase for restaurant meals than for foods sold in foodstores. In addition, there was larger real growth (spending adjusted for inflation) in the away-from-home market.

Meat products represent the largest share of total retail food expenditures. Retail value of meat in 1986 was 29 percent of total expenditures, compared with 23 percent for fruit and vegetables, the next largest expenditure group (table 16). Because food consumption changes slowly, there has been little change in the proportion of expenditures accounted for by meat products and other food groups from year to year.

Figure 4

Marketing bill, farm value, and consumer expenditures for farm foods



Data for domestically produced farm foods purchased by civilian consumers for consumption both at home and away from home.

Table 15--Marketing bill and farm value components of consumer expenditures for domestically produced foods

Year	Consumer expenditures			Marketing bill	Farm value	Farm value share of expenditures
	Total	At home 1/	Away from home 2/			
	Billion dollars					Percent
1950	44.0	--	-	26.0	18.0	41
1951	49.2	--	--	28.7	20.5	42
1952	50.9	--	--	30.5	20.4	40
1953	51.0	--	--	31.5	19.5	38
1954	51.1	--	-	32.3	18.8	37
1955	53.1	--	--	34.4	18.7	35
1956	55.5	--	-	36.3	19.2	35
1957	58.3	--	--	37.9	20.4	35
1958	61.0	--	-	39.6	21.4	35
1959	63.6	--	--	42.4	21.2	33
1960	66.9	--	-	44.6	22.3	33
1961	68.7	--	--	45.7	23.0	33
1962	71.3	--	--	47.6	23.7	33
1963	74.0	56.0	18.0	49.9	24.1	33
1964	77.5	58.5	19.0	52.6	24.9	32
1965	81.1	60.2	20.9	54.0	27.1	33
1966	86.9	64.0	22.9	57.1	29.8	34
1967	91.6	66.8	24.8	62.4	29.2	32
1968	96.8	69.5	27.3	65.9	30.9	32
1969	102.6	73.1	29.5	68.3	34.3	33
1970	110.6	78.2	32.4	75.1	35.5	32
1971	114.6	80.6	34.0	78.5	36.1	32
1972	122.2	85.4	36.8	82.4	39.8	33
1973	138.8	98.5	40.3	87.1	51.7	37
1974	154.6	109.5	45.1	98.2	56.4	36
1975	167.0	116.2	50.8	111.4	55.6	33
1976	183.3	127.2	56.1	125.0	58.3	32
1977	190.9	130.8	60.1	132.7	58.2	30
1978	216.9	149.2	67.7	147.4	69.5	32
1979	245.2	169.4	75.8	166.0	79.2	32
1980	264.4	180.1	84.3	182.7	81.7	31
1981	287.7	194.0	93.7	204.5	83.2	29
1982	298.9	196.7	102.2	215.2	83.7	28
1983	315.0	204.6	110.4	229.3	85.7	27
1984	332.0	213.1	118.9	240.6	91.4	28
1985	345.4	220.8	124.6	257.1	88.3	26
1986 3/	361.1	227.8	133.3	272.1	89.0	25

-- = Not available.

1/ Includes food primarily purchased at retail foodstores. 2/ Includes food purchased at restaurants, fast food outlets, and other public eating places, and food served in institutions such as hospitals, schools, and rest homes. 3/ Preliminary. Some historical data have been revised.

Table 16--Consumer expenditures and farm value for major food groups

Year	Meat	Fruit and vegetables 1/	Dairy products	Bakery products	Poultry	Grain mill products 2/	Eggs	Other foods 3/	Total
				Billion dollars					
Consumer expenditures:									
1975	48.0	35.6	23.3	18.2	8.6	5.9	4.1	23.3	167.0
1976	55.2	38.8	26.4	18.8	9.1	6.1	4.8	24.1	183.3
1977	59.0	40.8	27.8	18.1	9.6	6.3	4.4	24.9	190.9
1978	69.5	46.3	30.1	21.1	10.9	6.4	4.3	28.3	216.9
1979	80.2	52.5	33.5	23.8	12.6	7.8	4.8	30.1	245.3
1980	83.3	55.5	37.8	26.8	13.3	8.4	5.0	34.3	264.4
1981	86.6	62.8	41.4	29.0	14.7	8.9	5.2	39.1	287.7
1982	91.9	66.7	42.0	30.6	15.1	9.0	5.2	38.4	298.9
1983	97.9	70.0	45.0	31.0	16.3	9.6	5.4	39.8	315.0
1984	101.7	74.7	47.4	33.0	18.4	10.3	5.8	40.7	332.0
1985	103.2	78.5	49.4	34.6	19.9	10.9	6.1	42.8	345.4
1986	106.0	82.1	52.0	36.4	22.0	11.7	6.5	44.4	361.1
Farm value:									
1975	20.6	8.4	10.0	3.0	4.1	1.1	2.2	6.2	55.6
1976	21.6	8.8	11.3	2.6	4.0	1.0	2.6	6.4	58.3
1977	22.0	8.6	11.5	2.3	4.2	.9	2.3	6.4	58.2
1978	28.0	10.0	12.7	2.8	5.1	1.0	2.2	7.7	69.5
1979	31.5	10.9	14.6	3.4	5.5	1.4	2.6	9.3	79.2
1980	30.8	11.7	16.0	3.5	5.9	1.6	2.5	9.8	81.7
1981	31.1	13.3	17.0	3.4	6.1	1.5	2.7	8.1	83.2
1982	31.5	13.8	16.7	3.4	6.0	1.4	2.5	8.4	83.7
1983	31.4	13.3	18.0	3.5	6.6	1.4	2.7	8.8	85.7
1984	32.4	15.1	18.1	3.7	8.0	1.4	3.0	9.7	91.4
1985	30.5	15.2	17.7	3.4	7.9	1.3	2.3	10.0	88.3
1986	30.8	15.2	17.8	3.1	9.2	1.2	2.5	9.1	88.9

1/ Also includes soups, baby foods, condiments, dressings, spreads, and relishes. 2/ Includes flour, flour mixes, cereals, rice, and pasta. 3/ Includes fats and oils, sugar, and miscellaneous foods.

Farm Value Up Slightly

The farm value increased about $1 billion in 1986 to $89 billion, partially offsetting a decrease in 1985. Higher prices for hogs and poultry accounted for the small increase in total farm value. Lower grower prices for fruit, vegetables, food grains, and oilseeds resulted in lower farm values for these foods. Farm value in 1986 was only 9 percent higher than in 1980, whereas consumer spending was 36 percent higher.

The largest share of the money received by farmers for domestic food sales pays for meat products. In 1986, the farm value of meat was about 35 percent of the total. The next largest share, 20 percent, paid for dairy products. While livestock and dairy producers garnered over half the farm value, it is important to remember that they bought substantial amounts of grain from crop farmers.

The farm value of food products represents 25 percent of consumer expenditures for farm foods in 1986, 1 percentage point less than in 1985. The farm value is a much smaller part of expenditures for foods eaten away from home than for foods bought at stores because the cost of preparing and serving foods is a huge part of the cost of food eaten out. The 1986 farm value accounted for about 16 percent of away-from-home food expenditures, compared with about 30 percent of expenditures for farm foods in foodstores.

Food Spending Increases More Slowly Than Income

Although food expenditures have risen, food spending as a percentage of personal income has declined over the past decade. Americans spent about 14.7 percent of total disposable income on food in 1986, based on data reported by the U.S. Department of Commerce. This share compares with 15.4 percent in 1981 and 16.3 percent 10 years ago. Moderate inflation, coupled with increases in disposable personal income, reduced the share of income spent on food in most years during the past decade. Some of this decline in the proportion of income spent for food can be attributed to a decline in the farm value. Farm value of the foods produced on U.S. farms declined from about 4.7 percent of consumer disposable income 10 years ago to 3 percent last year.

The proportion of income spent on food varies widely by income levels. Based on 1984 data, the latest available from a consumer expenditure survey by the U.S. Department of Labor, consumers with incomes between $5,000 and $9,999 spent an average of 25.7 percent of their before tax income for food, those with incomes between $15,000 and $19,999 spent 16.7 percent, and consumers with incomes between $30,000 and $39,999 spent 11.6 percent.

Marketing Bill Boosted Food Spending

The marketing bill amounted to $272 billion in 1986, about $15 billion more than in 1985. This increase in the marketing bill accounted for practically all of the rise in consumer expenditures. Higher labor costs accounted for slightly less than half of last year's increase in the marketing bill. Much of the remaining increase in the bill occurred in the category of other costs, including such items as advertising and promotion, taxes and insurance, and professional services.

The 5.8-percent increase in the marketing bill in 1986 was greater than the rise in prices of most inputs and the general inflation rate. This was

because of increases in the volume of food marketed and inputs used, particularly labor and additional advertising and promotion.

Although the rise has slowed during the past several years, marketing costs continue to be the most persistent source of rising food costs. Consumer expenditures for domestic farm foods have increased about $97 billion since 1980. About $89 billion of this increase consists of charges for marketing products after they leave the farm. Farm value has increased only $8 billion since 1980.

What the Marketing Bill Bought

To get a clearer idea of what is represented by last year's marketing bill, it is helpful to look first at four broad functions that the food industry performs--processing, wholesaling, transporting, and retailing--and then at the specific cost items that add up to the marketing bill.

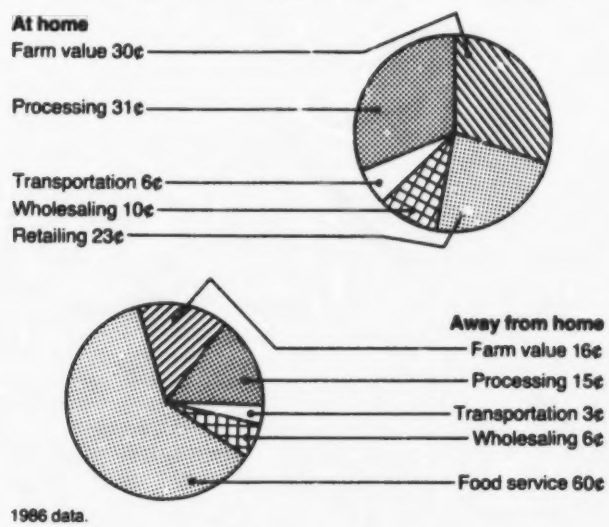
Costs of the functions performed are different for foods bought in foodstores than for meals and snacks purchased for consumption away from home. About 30 cents of each dollar spent in foodstores paid for the farm value in 1986. Thus, 70 cents paid the marketing bill.

For each dollar's worth of food bought in foodstores, 31 cents paid for processing. Between processor and retailer, another 10 cents was spent for wholesaling and 6 cents for intercity transportation. Finally, retailing charges added the last 23 cents (fig. 5 and table 17). These shares have been relatively constant over the years because costs of each function have risen at roughly similar rates.

For dollars spent for food away from home, 16 cents covered the farm value. Processing costs account for 15 cents, transportation charges for 3 cents, and wholesaling for 6 cents. Thus, 60 cents was paid for food service (the preparing and serving of food eaten away from home).

Figure 5

Where the food dollar goes at home and away



1986 data.

Table 17--Marketing function components of consumer expenditures

Expenditures and components	1980	1981	1982	1983	1984	1985	1986 1/
				Billion dollars			
Expenditures at foodstores	180.1	194.0	196.7	204.6	213.1	220.8	227.8
Farm value	65.9	66.6	65.9	66.8	70.7	68.1	68.0
Marketing bill	114.2	127.4	130.8	137.8	142.4	152.7	159.8
Processing cost	53.9	59.5	60.1	62.0	63.6	68.8	71.1
Intercity transportation cost	10.5	11.6	11.7	12.3	12.7	13.2	13.4
Wholesaling cost	15.7	17.5	19.7	20.5	21.3	22.1	22.8
Retailing cost	34.1	38.8	39.3	43.0	44.8	48.6	52.5
Expenditures for eating away from home	84.3	93.7	102.2	110.4	118.9	124.6	133.3
Farm value	15.8	16.6	17.8	18.9	20.7	20.2	21.0
Marketing bill	68.5	77.1	84.4	91.5	98.2	104.4	112.3
Processing cost	12.4	13.5	14.6	15.6	16.6	18.8	20.8
Intercity transportation cost	2.5	2.7	3.0	3.1	3.2	3.3	3.4
Wholesaling cost	4.7	5.3	5.9	6.6	7.1	7.5	8.0
Food service cost	48.9	55.6	60.9	66.2	71.3	74.8	80.1

1/ Preliminary. Some historical data have been revised.

The food processing and marketing industry is an important part of the American economy. The $272 billion the industry received from consumers in 1986 paid the wages and salaries of millions of employees and paid for all of the other costs of doing business.

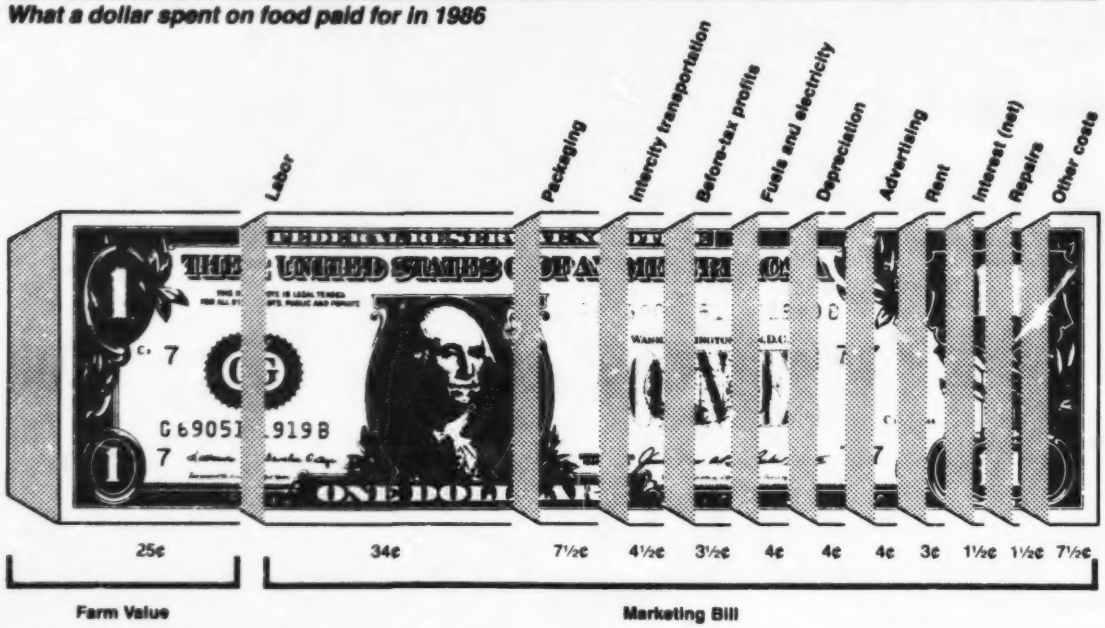
Labor, the Largest Cost

Direct labor costs, the largest part of the marketing bill, amounted to nearly $124 billion in 1986, about 34 percent of food expenditure (fig. 6 and table 18). Labor cost consists of wages and salaries, and employee benefit costs such as group health insurance, imputed earnings of proprietors and family workers, and tips for food service. Not included are the costs of labor engaged in for-hire transporting of foods or in manufacturing and distributing supplies used by industries.

Large costs rose about 6 percent in 1986, due mainly to a substantial rise in employment in the food industry. Food retailing employment climbed about 6 percent, reflecting the rapid growth of service departments, such as bakeries, in supermarkets. Employment rose about 4 percent in eating places and wholesaling and over 2 percent in food manufacturing. The total number of persons employed in the food industry rose about 5 percent in 1986, the largest yearly increase in many years.

Figure 6

What a dollar spent on food paid for in 1986



Includes food at home and away from home. Other costs include property taxes and insurance, accounting and professional services, promotion, bad debts, and many miscellaneous items.

About 11 million workers were employed in processing and distributing food in 1986. Nearly 5.9 million were employed in away-from-home eating places. Foodstores employed 2.9 million persons, food processors employed 1.6 million, and food wholesalers about 0.7 million.

Costs of employee benefits also affect changes in total labor costs of food marketing. Costs of benefits have grown more rapidly than wages and salaries over the past decade. For instance, food retailing employee benefits last year were about 24 percent of total labor cost, compared with 20 percent 10 years earlier, based on data from a Cornell University study on operating costs of food chains. Changes in costs of some benefits, which mainly represent time-off from work such as vacations and holidays, are reflected in wages and salaries. The largest cost of benefits, however, consist of Social Security and unemployment taxes, and employer contributions to employee insurance and pension plans. These costs are referred to as supplements to wages and salaries in income statistics published by the U.S. Department of Commerce. For the food manufacturing industry, these supplements were about 19 percent of total labor cost in 1985 (the latest data available). Data for food retailing and wholesaling are not available, but supplements averaged about 13.5 percent of labor cost for all wholesale and retail trade.

Rising health insurance rates have particularly affected supplemental benefit costs as the cost of medical care services increased 138 percent from 1976 to 1986, as measured by the CPI. The tax rate for Social Security also has risen along with the maximum level of taxable wages. In 1986, the employer's portion of the Social Security tax was 7.15 percent of worker earnings, compared with 5.85 percent in 1976. The maximum taxable annual earnings was $42,000 in 1986, up from $15,300 in 1976.

Higher costs of benefits continued to boost food industry labor costs in 1986. However, the growth in these costs has slowed to near the same rate as that for wages and salaries. This has resulted in part from changes in labor

Table 18--Components of the marketing bill for domestically produced farm foods

Year	Labor 1/	Packaging materials	Intercity rail and truck transportation	Fuels and electricity	Corporate profits before taxes	Other 2/	Total marketing bill 3/
				Billion dollars			
1967	25.9	7.3	4.3	--	3.4	21.5	62.4
1968	28.0	7.6	4.5	--	3.6	22.2	65.9
1969	30.4	7.9	4.6	--	3.6	21.8	68.3
1970	32.2	8.2	5.2	2.2	3.6	23.7	75.1
1971	34.5	8.5	6.0	2.4	3.9	23.2	78.5
1972	36.6	8.9	6.1	2.5	4.0	24.3	82.4
1973	39.7	9.4	6.4	2.8	5.4	23.4	87.1
1974	44.3	11.8	7.5	3.7	6.1	24.8	98.2
1975	48.3	13.3	8.4	4.6	7.1	29.7	111.4
1976	53.8	14.5	9.1	5.0	7.6	35.0	125.0
1977	58.3	15.1	9.7	6.0	7.9	35.7	132.7
1978	66.2	16.6	10.5	7.1	9.2	37.8	147.4
1979	75.2	18.6	11.8	8.2	9.9	42.5	166.2
1980	81.5	21.0	13.0	9.4	10.9	46.9	182.7
1981	91.0	22.8	14.3	10.3	12.0	54.1	204.5
1982	96.6	23.2	14.7	11.3	13.0	56.4	215.2
1983	102.4	24.3	15.4	12.0	14.7	60.5	229.3
1984	109.3	26.3	15.9	12.7	15.9	60.5	240.6
1985	116.5	27.6	16.5	13.1	17.0	66.4	257.1
1986	123.7	28.8	16.8	13.6	17.8	71.4	272.1

-- = Not available.

1/ Includes employee wages or salaries and their health and welfare benefits. Also includes imputed earnings of proprietors, partners, and family workers not receiving stated remuneration. 2/ Includes depreciation, rent, advertising and promotion, interest, property taxes and insurance, accounting and professional services, and many miscellaneous items. 1967-69 data also include fuels and electricity. 3/ The marketing bill is the difference between the farm value and consumer expenditures for these foods both at foodstores and away-from-home eating places. Thus, it covers processing, wholesaling, transportation, and retailing costs and profits. Some historical data were revised.

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agreements requiring employees to pay more of the cost of health plans, a slower rise in the maximum employer Social Security tax, and fewer increases in employee vacation and holiday benefits.

Packaging Costs

Food containers and packaging materials, the second largest food marketing cost, totaled about $28 billion in 1986, about 8 percent of total food expenditures. Costs rose 4 percent over 1985, mainly reflecting higher costs for paperboard boxes and containers, glass containers, and plastic materials.

Paperboard boxes and containers are the largest packaging cost. The food industry spent about $11 billion, or about two-fifths of total packaging expenses, on paper and paperboard products in 1986. Fiber (cardboard) boxes, the primary container used to ship nearly all processed foods, represented about a third of this total. Sanitary food containers, including those for such products as fluid milk, margarine and butter, ice cream, and frozen food, cost almost as much. The third-largest paperboard item was folding boxes used for such dry foods as cereals and perishable bakery products.

Metal containers are next in importance, making up about a fourth of total food packaging costs. Cans have probably become less important in packaging as more glass and plastic bottles and fibers containers are used.

Costs of plastic containers and wrapping materials are nearly 15 percent of food packaging costs. Plastic is an important source of trays for meat and produce, bottles for milk and fruit juices, jars and tubs for cottage cheese and other dairy products, and flexible wrapping materials, such as polyethylene film, for protective covering of baked goods, meats, and produce.

Transportation Costs

Intercity truck and rail transportation costs for farm foods were about $17 billion in 1986, about 4-1/2 percent of retail food expenditures. Larger total food marketings boosted costs about 2 percent last year.

Nearly stable rates held down transportation costs. Railroad freight rates declined by about 1 percent in 1986, following a 1-percent rise in 1985. Average truck rates for shipping food products probably increased very little, if any, as operating truck costs declined about 3 percent.

Energy Costs

Fuel and electricity costs in the food industry rose at more than 1.5 times the annual rate of other costs since the beginning of the sharp rise in energy prices in 1973 to 1981. Rising about 20 percent a year, energy costs increased from 2 percent of retail food expenditures to 4 percent. However, the rise in costs has slowed the past 4 years, particularly last year, as petroleum prices declined. Last year's energy bill came to $13.6 billion. Costs rose slightly in 1986 due to the expanded size of the food industry and higher electricity rates.

This energy bill counted only the costs of electricity, natural gas, and other fuels used in food processing, wholesaling, and retailing, including food service at eating places. It excluded transportation fuel costs, except for those incurred for food wholesaling.

Public eating places and other food service facilities incur over a third of the fuel and electricity costs of food marketing. These energy expenses have risen more rapidly the past decade than for other food marketing functions because of the relatively large growth of the away-from-home food market. Also, away-from-home food service has the highest energy costs per dollar of sales, averaging about 3.8 percent.

Food retailing and processing each account for about 25 percent of food marketing fuel and electricity costs. Energy costs have risen in relation to other retailing costs, increasing from about 1 percent of foodstore sales in 1976 to about 1.3 percent last year. The major portion of the food retailing energy bill is electricity used to operate refrigeration equipment.

Other Costs Added Up

The major costs just discussed together accounted for 67 percent of the 1986 food marketing bill. The rest of the bill included a variety of other costs (29 percent of the total) and profits (4 percent).

Many relatively small costs were incurred in performing food processing and marketing functions. Although most such costs individually were small, they added to $78 billion. These costs included depreciation, rent, advertising and promotion, repairs, bad debts, contributions, property taxes and insurance, interest, and the nonfood costs of foodservice in schools, hospitals, and other institutions. Some of these other costs are estimated using data from trade publications, the Internal Revenue Service (IRS), and the Bureau of the Census. The largest of these costs are plant and equipment rent and depreciation (7 percent of total consumer expenditures), media--television, radio, and newspaper--advertising expenditures (about 4 percent of food expenditures), net interest (about 1.5 percent of expenditures) and repairs (1.5 percent).

Corporate Profits

Before-tax profits earned by firms from marketing foods were estimated at about $12 billion for 1986, compared with $11 billion in 1985. The estimate was made by multiplying sales by profit rates per dollar of sales for food retailers, wholesalers, manufacturers, and public eating places derived from data compiled by IRS from corporation income tax returns. Profits of the food industry last year were 3.5 percent of food spending, about the same as in recent years.

FOOD PRICE HIGHLIGHTS

Higher prices for pork, poultry, and eggs were a major cause of the rise in retail food prices in 1986. Farm value increased for most animal products but declined for most other foods because of larger supplies of commodities last year. There was a further increase in the farm-to-retail price spread for most foods.

Choice Beef

Beef prices increased sharply from 1978 to 1980, then remained quite stable until 1985 and 1986 when prices dropped (table 19). The 1986 weighted average price of Choice beef was $2.31 per pound, 9 cents lower than in 1984 and 12

Table 19—Choice beef and pork: Retail price, farm value, and farm-to-retail price spread by year

Item	Retail price 1/	Net carcass value 2/	Net farm value 3/	Farm-to-retail spread			Farm value share 6/
				Total	Carcass-retail 4/	Farm-carcass 5/	
	Cents per retail pound						Percent
Choice beef:							
1980	237.6	155.4	145.0	92.6	82.2	10.4	61
1981	238.7	149.3	138.5	100.2	89.4	10.8	58
1982	242.5	150.7	140.5	102.0	91.8	10.2	58
1983	238.1	145.4	136.2	101.9	92.7	9.2	57
1984	239.6	147.6	140.0	99.6	92.0	7.6	58
1985	232.6	135.2	126.8	105.8	97.4	8.4	55
1986	230.7	133.1	124.4	106.3	97.6	8.7	54
Pork:							
1980	139.4	98.0	63.2	76.2	41.4	34.8	45
1981	152.4	106.7	70.3	82.1	45.7	36.4	46
1982	175.4	121.8	88.0	87.4	53.6	33.8	50
1983	169.8	108.9	76.5	93.3	60.9	32.4	45
1984	162.0	110.1	77.4	84.6	51.9	32.7	48
1985	162.0	101.1	71.4	90.6	60.9	29.7	44
1986	178.4	110.9	82.4	96.0	67.5	28.5	46

1/ Composite of all cuts. 2/ For quantity equivalent to 1 retail pound: beef, 1.48 pounds of carcass beef; pork, 1.06 pounds of wholesale cuts. 3/ For quantity of live animal equivalent to 1 retail pound: beef, 2.4 pounds; and pork, 1.7 pounds, minus byproduct allowance. 4/ Includes retailing, meat fabricating, wholesaling, and intracity transportation. 5/ Charges for livestock processing and transporting of meat to city where consumed. 6/ Percentage of retail price.

cents lower than the 1982 record high. The 1986 price also was 7 cents lower than in 1980. Prices varied during 1986 from a high of $2.37 per pound in January to a low of $2.27 in June. Prices of individual cuts ranged from about $1.20 per pound for ground beef to over $4.00 per pound for porterhouse steak.

The farm value decreased about 0.5 cent more than the retail price from 1985 to 1986. The farm value averaged only 54 percent of the retail price of beef in 1986, the lowest yearly average ever recorded.

The farm value is computed from the average of terminal and direct market prices for Choice steers, yield grade 3, in eight markets. Computing the farm value takes three steps. Prices per pound of slaughter steers are multiplied by 2.4 pounds, the quantity of live animal required to sell 1 pound of Choice beef at retail. We then estimate the value of byproducts, principally the hide, obtained from the slaughtered animal. We subtract this byproduct value to obtain the farm value of the meat alone.

The farm-to-retail price spread for Choice beef last year rose slightly from 1985, averaging $1.06 a pound, but was the highest ever recorded. The spread varied from a low $1.00 in November to a high $1.13 in June. The variation in the spread was less in 1986 than in recent years from relatively stable prices during the year. The price spread for beef was relatively stable between 1981 and 1984 and did not keep pace with inflation. Thus, the 1985-86 spread averaged less than 6 percent higher than in 1981-84.

The spread pays for various beef processing and marketing functions. The slaughtering function, representing all of the activities performed from the time the packer purchased the cattle until the carcasses were shipped from the packing plant, cost 4.9 cents in 1986 (table 20).

Many packers cut beef carcasses into primals, subprimals, and retail cuts, but the estimated spread for slaughtering assumes that the beef is sold in carcass form. The slaughtering value is obtained by deducting the farm value and estimated transportation costs for the carcass (from the packer to the city where consumed) from an average wholesale value of Choice steer carcasses (600-700 pounds, yield grade 3). Thus, the estimate is derived from price differences and is not a compilation of costs. The decline in 1984's slaughtering value and the lower value the past 2 years relative to earlier years may reflect the downward pressure on wages in the industry.

Table 20--Choice beef and pork: Farm value, marketing costs by function, and retail price

Item	1982	1983	1984	1985	1986
		Cents per retail pound			
Beef:					
Farm value	140.5	136.2	140.0	126.8	124.4
Slaughtering	6.8	5.4	3.8	4.5	4.9
Intercity transportation	3.8	3.8	3.8	3.9	3.8
Warehousing and store delivery	16.0	15.7	15.8	15.3	15.2
Breaking carcass	11.0	11.4	11.8	12.3	12.5
Cutting and merchandising	64.8	65.6	64.4	69.8	69.9
Retail price	242.5	238.1	239.6	232.6	230.7
Pork:					
Farm value	88.0	76.5	77.4	71.4	82.4
Slaughtering and processing	30.3	28.9	29.1	26.1	25.0
Intercity transportation	3.5	3.5	3.6	3.6	3.5
Warehousing and store delivery	11.6	11.2	10.7	10.7	11.7
Cutting and merchandising	42.0	49.7	41.2	50.2	55.8
Retail price	175.4	169.8	162.0	162.0	178.4

Transportation of beef from the packer to the retail marketing area amounted to 3.8 cents per retail pound in 1986. Warehousing and store delivery were estimated at 15 cents per pound at retail. This estimate is based on data reported in the 1982 Census of Wholesale Trade, which indicated that these costs represented 8.3 percent of gross sales of meat wholesalers.

The spread for breaking the carcass into principal parts such as the loin and chuck, which could be done at the packing plant, at the wholesale level, or by the retailer, was estimated at 12.5 cents per pound in 1986. Cutting and retail merchandising of Choice beef cost 70 cents per pound in 1986. This amount represents the difference between the total of all other spreads and the retail price.

Data for 1982-86 indicate a slow upward trend in the spread for breaking the carcass and of cutting and merchandising the beef. The increases reflect the effect of inflation on marketing costs. The slaughtering spread declined from 1982 to 1984 and rose from 1984 to 1986. The variation in the slaughtering value may be partly related to variations in byproduct values, an increasing shift to box beef, and to a different allocation of returns between the cutting and slaughtering functions.

Changes in the quality, supply and demand, and price reporting of carcass beef also may be affecting the carcass price series used in deriving the slaughtering spread.

Pork

Retail pork prices averaged $1.78 in 1986, 16 cents higher than in 1985. Even with large total meat supplies, a 5-percent decline in pork production substantially increased retail pork prices.

The farm value increased 11 cents to 82.4 cents per retail pound equivalent in 1986. The large increase in farm value caused the farm value share to rise from 44 to 46 percent of the retail price of pork.

Farm value is computed from the average price of barrows and gilts at seven midwestern markets. This price is then multiplied by 1.7 pounds, the quantity of live animal needed to sell 1 pound of pork at retail. A value for lard and other byproducts is subtracted to obtain the net farm value.

The farm-to-retail price spread for pork rose 5 cents to 96 cents per pound. This increase and a similar one in 1985 followed a large decrease in the spread in 1984 when retail prices sharply declined. The 1986 spread was a record high.

Among components of the farm-to-retail spread for pork, the spread for the slaughtering and processing functions amounted to 25 cents in 1986, 1 cent less than in 1985 (table 20). This spread represents charges for cutting the carcass into primals and processing hams, bacon, and other products. We estimated this spread by deducting the farm value and intercity transportation costs from a composite wholesale price of pork.

The transportation price spread for pork between the packer and retail marketing area was 3.5 cents per pound in 1986, unchanged from the previous year. The warehousing and store delivery spread was estimated at about 12 cents per retail pound in 1986.

The cutting and retail merchandising price spread of about 56 cents made up the largest component of the farm-to-retail price spread for pork. This was 6 cents higher than in 1985 when this value increased about 6 cents following an 8-cent decline a year earlier. The retail cutting and merchandising component is derived as a residual between the total of all other functions and the retail price. The variability in this spread may be partly explained by the time lag between changes in farm, wholesale, and retail prices.

Broilers

Broiler prices increased at both the farm and retail level in 1986. Retail prices rose about 10 percent to the highest level in recent years. The retail price increased slightly more than the farm value, increasing the marketing spread (tables 21 and 22).

Per capita consumption of broilers continued to climb to a new high of about 57.6 pounds in 1986, 2 pounds more than in 1985. Broiler consumption rose an average 1.5-2 pounds per capita per year during the past decade, whereas red meat consumption has leveled off. Total poultry meat consumption represented about 34 percent of all meat consumed in the United States in 1986, up from 25 percent in 1975.

Strong broiler prices in face of increasing supplies reflect strong demand. Much of the demand is for further processed products. Broiler producers are cutting chicken into parts, and most are further processing chicken into fillets, nuggets, and other value-added products. Much of this further processing is done to the buyers' specifications. The processor generally realizes a more favorable gross margin and increased volume. While most of these products are served through fast-food and institutional outlets, considerable volumes are sold through retail stores for home consumption. These further processed products are not included in farm-to-retail price spread computations but represent increased demand. As a result, they kept prices from dropping as supplies rose.

Eggs

Average retail egg prices were higher for most of 1986, ranging from 80 to 91 cents per dozen and averaging 87 cents per dozen, about 7 cents higher than 1985. The farm value of eggs increased 2 cents per dozen, and net returns to egg producers were positive in all but the second quarter of 1986. Due to higher retail prices, the farm-to-retail price spread increased 4 cents in 1986 to 32.7 cents per dozen. However, it was about 2 cents lower than the average price spread for 1981-84. The retailing spread averaged 15.7 cents per dozen in 1986, which was about half of the total farm-to-retail spread.

Fluid Milk

Retail milk prices declined slightly in 1986. The retail price for a half-gallon of whole milk sold in stores averaged $1.11, down about 2 cents from a year earlier (table 23).

The farm value of 54.8 cents was 1.3 cents lower than in 1985. The farm value represented 49 percent of the consumer's milk dollar in 1986, about the same as the year before but 2 percentage points lower than in 1984.

Table 21--Broilers and eggs: Farm value, marketing costs by function, and retail price

Item	Farm value	Marketing functions: Assembly and procurement	Processing	Intercity transportation	Wholesaling	Retailing	Retail price
			Cents				
Broilers, ready-to-cook, whole (pound):							
1975	37.0	1.4	7.5	1.4	3.9	12.0	63.2
1976	32.6	1.1	7.8	1.3	3.7	13.2	59.7
1977	33.0	1.1	8.0	1.4	3.7	12.9	60.1
1978	37.2	1.0	8.7	1.4	3.8	14.4	66.5
1979	35.7	1.3	9.6	1.6	4.2	15.6	68.0
1980	38.8	1.4	9.8	1.7	4.3	16.0	72.0
1981	37.6	1.6	10.3	1.7	4.3	18.2	73.7
1982	35.9	1.6	10.4	1.7	4.3	17.7	71.6
1983	38.0	1.6	10.5	1.7	4.3	16.7	72.8
1984	43.9	1.6	10.8	1.7	4.4	19.0	81.0
1985	40.2	1.6	9.3	1.7	4.4	19.1	76.3
1986	46.3	1.6	9.1	1.7	4.4	20.4	83.5
Eggs, Grade A large (dozen):							
1975	50.8	1.2	9.3	1.5	3.7	10.5	77.0
1976	58.0	.9	9.6	1.4	3.5	11.5	84.9
1977	53.8	.9	10.3	1.5	3.5	12.3	82.3
1978	49.7	.9	10.5	1.6	3.4	12.4	78.5
1979	53.7	1.1	11.7	1.8	3.9	13.7	85.9
1980	51.0	1.2	12.4	1.9	4.1	13.8	84.4
1981	56.1	1.2	12.2	1.9	4.1	15.1	90.6
1982	53.1	1.2	12.2	1.9	4.1	16.0	88.5
1983	58.5	.8	11.6	1.7	3.5	16.0	92.1
1984	65.7	1.0	12.1	1.5	3.7	16.5	100.5
1985	52.0	1.0	11.0	1.5	3.7	11.2	80.4
1986	54.3	1.0	10.8	1.5	3.7	15.7	87.0

Table 22--Broilers and eggs: Cost components of marketing functions, 1986

Item	Farm value 1/	Marketing function: Assembly	Processing	Hauling and distributing 2/	Retailing	Retail price
			Cents			
Broilers (per pound):						
Labor	--	0.8	4.0	2.8	--	--
Packaging	--	--	2.1	.2	--	--
Transportation 3/	--	--	--	--	--	--
Business taxes	--	--	.2	.2	--	--
Depreciation	--	.2	.5	.4	--	--
Rent	--	--	4/	.1	--	--
Repairs	--	--	.3	.2	--	--
Advertising	--	--	.3	--	--	--
Interest	--	.1	.3	.2	--	--
Energy	--	.5	.6	1.5	--	--
Other	--	--	.5	.3	--	--
Profit	--	--	.3	.2	--	--
Total	46.3	1.6	9.1	6.1	20.4	83.5
Eggs (per dozen):						
Labor	--	.4	3.1	2.3	--	--
Packaging	--	--	5.1	.2	--	--
Transportation 5/	--	--	--	--	--	--
Business taxes	--	--	.4	.2	--	--
Depreciation	--	.1	.5	.3	--	--
Rent	--	--	4/	.1	--	--
Repairs	--	--	.3	.2	--	--
Advertising	--	--	.3	--	--	--
Interest	--	.1	.3	.2	--	--
Energy	--	.4	.4	1.2	--	--
Other	--	--	.2	.2	--	--
Profit	--	--	.2	.3	--	--
Total	54.3	1.0	10.8	5.2	15.7	87.0

-- = Not estimated.

1/ Farm value for eggs includes allowance for 3-percent loss during marketing. Livestock broilers converted to retail equivalent. 2/ Includes long-distance transportation plus wholesaling and local delivery. 3/ Consists of 1 cent of assembly, and 1.7 cents for long-distance transportation and 2.1 cents for local delivery from the hauling and distributing component. 4/ Included in depreciation. 5/ Consists of 0.8 cent of assembly, and 1.7 cents for long-distance transportation and 2.4 cents for local delivery from the hauling and distributing component.

Table 23--Fluid whole milk: Farm value, marketing costs by function, and retail price per half-gallon

Year	Farm value 1/	Marketing functions: Assembly and procurement 2/	Processing 3/	Wholesaling 3/	Retailing 4/	Retail price 5/
			Cents			
1974	40.9	2.7	10.7	13.6	8.9	76.8
1975	41.2	2.8	11.4	13.6	7.9	76.9
1976	46.2	2.8	10.6	12.1	9.3	81.0
1977	45.1	2.9	13.2	12.6	8.3	82.1
1978	47.0	3.1	14.6	14.3	7.1	86.1
1979	52.2	3.8	15.1	16.6	8.3	96.0
1980	55.8	4.5	15.6	18.9	10.2	104.9
1981	59.5	4.7	16.0	19.1	12.4	111.7
1982	59.2	4.5	16.5	19.3	13.0	112.4
1983	59.5	4.3	15.8	17.5	15.7	112.8
1984	58.2	4.4	16.7	16.6	16.8	112.7
1985	56.1	4.8	17.9	16.8	17.8	113.4
1986	54.8	--	--	--	--	111.4

-- = Not available.

1/ Prices received by farmers are normally quoted for 3.5-percent butterfat at plant of first receipt. This price has been adjusted for transportation from farm to first plant to get the farm price, then adjusted to get the value of milk containing 3.3-percent butterfat. There are approximately 23.2 half-gallons of milk per 100 pounds. 2/ Nonfarm costs of supplying milk to processors, including laboratory and onfarm field service to assure quality, pickup at farms, transportation, receiving and reloading as necessary, and management of raw milk reserves. 3/ Data for processing and wholesaling represent costs for 30 fluid milk processor-distributors, which are representative of moderate-size, single-plant operations throughout the country. Very small plants and plants operated by retail food chains are not included. 4/ May include some wholesaling formerly performed by processors. 5/ Average of Bureau of Labor Statistics monthly prices.

Processing and wholesaling typically are performed by the same firm. The combined processing and wholesaling margin in 1985 (the latest available data) was 34.7 cents per half-gallon. The processor-distributor took about 31 percent of the retail price in 1985, up about 1 percentage point from 1984. The retailing margin was 17.8 cents per half gallon in 1985, which represented about 16 percent of the retail price, up from 15 percent in 1984.

Fruit and Vegetables

Processing and marketing charges for selected fruit and vegetables (fresh potatoes, lettuce, oranges, frozen orange juice concentrate, and canned tomatoes) help explain increases in price spreads and, therefore, retail prices over the years (table 24).

Table 24- Selected fruit and vegetables: Farm value, marketing spread by function, and retail price 1/

Food item and year	Farm value 1/	Marketing function: Packing or processing	Intercity transportation 2/	Wholesaling	Retailing	Retail price 3/
			Cents			
Potatoes, Northeast, round white (10-lb. bag):						
1980	4/ 62.3	17.3	9.3	7.1	83.4	5/ 179.5
1981	4/ 48.3	30.2	15.1	12.4	145.2	5/ 252.2
1982	4/ 47.7	19.8	10.5	8.1	95.1	5/ 181.2
1983	4/ 55.7	15.5	8.3	6.4	74.4	5/ 160.2
1984	4/ 67.8	18.2	9.7	7.5	87.6	5/ 190.9
1985	4/ 37.0	18.2	9.7	7.5	87.8	5/ 160.3
1986	4/ 50.0	15.7	8.4	6.4	75.3	5/ 155.8
Oranges, Calif. (pound):						
1980	5.0	9.0	4.8	3.4	13.8	36.0
1981	7.6	7.5	4.9	4.9	14.6	39.5
1982	17.1	4.0	5.2	5.5	15.8	47.6
1983	5.3	8.6	5.2	5.9	13.7	38.7
1984	17.2	5.8	5.4	4.9	16.6	49.9
1985	12.4	9.4	5.4	6.8	19.4	53.4
1986	8.2	9.9	5.7	5.5	18.3	47.6
Iceberg lettuce, Calif. (pound):						
1980	6/ 4.5	7/ 5.6	5.3	4.9	25.4	45.7
1981	6/ 5.9	7/ 6.8	5.5	3.4	27.1	48.7
1982	6/ 7.4	7/ 7.5	5.7	5.2	30.4	56.2
1983	6/ 5.8	7/ 7.5	5.7	5.3	31.2	55.5
1984	6/ 4.0	7/ 7.5	5.7	4.4	28.8	50.4
1985	6/ 7.1	7/ 7.5	5.6	5.1	27.3	52.6
1986	6/ 5.8	7/ 7.7	6.0	6.1	28.3	53.9
Orange juice, frozen (12-ounce can):						
1980	36.2	12.2	3.0	13.0	23.1	8/ 87.5
1981	41.0	23.3	3.3	12.4	22.0	8/ 102.0
1982	46.3	18.7	3.4	13.6	24.1	8/ 106.1
1983	44.0	20.1	3.5	13.3	23.5	8/ 104.4
1984	49.0	32.7	3.5	13.2	23.2	8/ 121.6
1985 9/	61.9	18.5	3.5	17.2	30.5	8/ 131.6
1986 10/	39.4	23.4	3.8	14.5	25.7	8/ 106.8
Tomatoes, Calif. (303 can):						
1980	5.0	22.7	4.4	1.9	8.2	42.2
1981	4.5	33.3	4.9	1.4	5.8	49.9
1982	4.9	37.2	5.0	1.5	6.4	55.0
1983	5.1	30.5	5.1	2.3	9.6	52.6
1984	4.9	29.6	5.2	2.4	10.4	52.5
1985	4.9	29.3	5.3	2.3	9.7	51.5
1986	4.8	27.7	5.3	2.6	11.0	51.4

1/ Payment for the quantity of farm product equivalent to the retail unit minus imputed value of byproduct computed from average grower prices. 2/ Costs are for truck shipment. 3/ U.S. average retail prices except as noted. Prices of fresh produce were weighted by the quantities marketed. 4/ Prices include some packing costs since many growers may grade, wash, and bag the potatoes. 5/ Selected eastern markets. 6/ Value in the field. 7/ Contract price for cutting, packing, hauling, cooling, and selling. 8/ Estimated by Florida Citrus Commission. 9/ Revised. 10/ Preliminary.

Retailing accounts for the largest share of the marketing expense for the fresh produce items (potatoes, oranges, and lettuce). Retailing expenses for oranges averaged 47 percent of the farm-to-retail spread during 1982-86. The retailing share averaged 61 percent for lettuce and 71 percent for potatoes. The fact that fresh produce sales per square foot of display space are below the average for the store and the fact that retailers experience a certain percentage of spoiling loss with fresh produce contribute to the comparatively high retailing costs. The retailing component for frozen concentrated orange juice and canned tomatoes averaged 38 and 18 percent, respectively, of the farm-to-retail price spread.

Packing costs made up the second-largest share of the price spread for the fresh produce items, or about 17 percent of total farm-to-retail price spread, followed by intercity transportation and wholesaling costs, which accounted for another 12 and 11 percent over the past 5 years.

The farm-to-retail spread and retail price of potatoes declined in 1986, but higher charges for marketing caused a rise in retail lettuce prices. A sharp decrease in farm value accounted for most of the decline in the retail price of fresh California oranges.

Processing charges for canned tomatoes make up 65 percent of the farm-to-retail price spread. A principal component of the processing spread of 28 cents is packaging: the metal can, the label, and the shipping case. Processing charges continued to decline in 1986, but both wholesaling and retailing charges increased 13 percent.

The retail price of a 12-ounce can of frozen concentrated orange juice decreased 25 cents to $1.07 in 1986. The farmers' return decreased 22 cents. The decline in prices was due to large imports from Brazil and larger supplies of Florida-produced concentrate. The processor's share rose 5 cents to 23 cents. Charges for retailing and processing each made up about 33 percent of the farm-to-retail price spread over the past 5 years, wholesaling charges about 25 percent, and transportation costs about 5 percent. Packaging represents the largest cost of processing. Automated operations have minimized the labor cost of concentrated orange juice processing. Transportation and wholesaling charges remained fairly constant. Wholesaling charges remained high because the product must be kept frozen at all times to maintain quality.

Bread

The average retail price of white pan bread in 1986 was 56.5 cents per pound, about 1 cent higher than in 1985 (table 25). This price is the average of monthly prices reported by the Bureau of Labor Statistics.

The farm value of wheat, at 3.5 cents, was 0.6 cent lower than in 1985. The farm value represents the payment to farmers for the quantity of wheat (approximately 0.86 pound) required to produce the flour for a 1-pound loaf of bread. The payment is computed from the average farm price for all wheat. A deduction is made for the value of millfeed, a byproduct of milling the wheat. The value of the millfeed ranges from 15 to 20 percent of the value of the wheat, depending on the flour milling extraction rate, the price of flour, and the price of millfeed.

Table 25--White bread: Retail price, farm value of ingredients, farm-to-retail price spread, and farm value share of retail price per 1-pound loaf

Year	Retail price	Farm value			Farm-to-retail price spread	Farm value share	
		Wheat 1/	Other farm ingredients 2/	All ingredients		Wheat	All ingredients
	Cents					Percent	
1970	27.7	2.6	0.8	3.4	24.3	9	12
1971	28.5	2.6	.9	3.5	25.0	9	12
1972	28.2	2.9	.9	3.8	24.4	10	13
1973	31.5	4.1	1.4	5.5	26.0	13	17
1974	39.3	5.4	2.5	7.9	31.4	14	20
1975	41.0	4.5	2.3	6.8	34.2	11	17
1976	40.2	3.8	1.7	5.5	34.7	9	14
1977	40.5	2.7	.7	3.4	37.1	7	8
1978	41.7	3.3	.7	4.0	37.7	8	10
1979	46.7	4.1	.8	4.9	41.8	9	10
1980	50.9	4.5	.8	5.3	45.6	9	10
1981	52.5	4.7	.8	5.5	47.0	9	10
1982	53.2	4.4	.6	5.0	48.2	8	9
1983	54.2	4.5	.7	5.2	49.0	8	9
1984	54.1	4.3	.8	5.1	49.0	8	9
1985	55.3	4.1	.7	4.8	50.5	7	9
1986	56.5	3.5	.5	4.0	52.5	6	7

1/ Payment to farmers for the quantity of wheat (approximately 0.86 pound) required to produce the flour for a 1-pound loaf of white bread, minus the value of millfeed byproducts. Based on average farm prices for hard winter and spring wheat in 11 States producing these wheats through 1982; all wheat prices used beginning in 1983. 2/ Value for lard, shortening, granulated sugar, and nonfat dry milk through 1976. Value for 1977 forward is for lard, soybean oil, high-fructose corn syrup, corn syrup, and soy-whey blend.

Other farm-derived ingredients, including lard, soybean oil, high-fructose corn syrup, and soy-whey blend, contributed 0.5 cent to farm value for a total farm value of 4 cents. Farm value of other ingredients declined in 1986 because of lower corn and soybean prices. Corn is the source of sweetener used in the bread, and soybeans are the main source of the shortening ingredient.

Sugar

Because of the stability provided by the price-support program for sugar, retail sugar prices, together with the farm value and price spreads, changed very little in crop year 1985/86. The domestic raw sugar price, which is the basis for pricing all domestic sugar, decreased about 1 cent per pound during crop year 1985/86. This slight decline resulted in slightly lower wholesale and retail sugar prices.

The 1985/86 farm value of a pound of sugar was 13 cents, virtually unchanged from a year earlier (table 26). The farm value is based on the season average prices received by growers in the United States for sugarcane and sugar beets. In 1985/86, the farm value accounted for 39 percent of the retail price of sugar, up 1 percentage point from the previous year.

The farm-to-retail price spread was about 21 cents in 1985/86, unchanged from the previous year. The processing and refining component of the spread amounted to about 15 cents, down 1 cent from the previous year. This spread is the difference between the farm value and an average effective wholesale price for sugar packed in 5-pound bags. This spread covers all the functions of transporting sugarcane and sugar beets to processing plants, processing sugarcane and refining raw cane sugar, processing sugar beets, and selling sugar to buyers.

The wholesaling and retailing spread in 1985/86 was estimated to be about 6 cents per pound, up less than 1 cent from the previous year. This spread is the difference between the average retail price and average wholesale price for sugar. It includes intercity transportation and wholesaling and retailing charges.

Table 26--Sugar: Farm value, price spreads, and retail price

Item	Crop year beginning October				
	1981/82	1982/83	1983/84	1984/85	1985/86
	Cents per pound				
Farm value 1/	12.2	13.8	14.3	13.4	13.3
Processing and refining spread 2/	14.8	16.9	16.8	15.9	14.6
Wholesaling and retailing spread 3/	5.7	4.2	4.2	5.5	6.1
Retail price 4/	32.7	34.9	35.3	34.8	34.0

1/ Based on season average prices received by continental U.S. sugar producers for sugarcane in Louisiana and Florida, and for all sugar beets. 2/ Difference between the farm value and an average of effective wholesale prices. 3/ Difference between the retail price and the wholesale price. 4/ Average of Bureau of Labor Statistics' monthly retail prices for sugar sold in 33- to 80-ounce packages.

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